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ABSTRACT

The Washington State Self-Employment and Enterprise Demonstration (SEED) was the first federally sponsored self-employment demonstration program for unemployed workers in the United States. Its primary purpose was to determine the viability of self-employment as a reemployment option for recipients of Unemployment Insurance (UI) benefits who do not have immediate job prospects. The SEED Demonstration was implemented in six sites, representing both rural and urban areas of Washington, from September 1989 through March 1991. It was implemented as a classical experiment, in which eligible program applicants were randomly assigned either to a treatment group (N=755) or to a control group (N=752). Those assigned to the treatment group were offered business startup training, a waiver of the UI work search requirement, and periodic payments equal to their regular UI benefits. Those who achieved all project requirements were also eligible for a lump-sum payment equal to their remaining UI benefits. Interim impacts were based on data from a follow-up telephone survey approximately 21 months after assignment. Results indicated the SEED Demonstration dramatically increased the likelihood of being self-employed (by 25 percentage points), accelerated entry into self-employment (by 6 months), and increased earnings from self-employment (by about \$3,000). It delayed reemployment in a wage and salary job (by 1 month) and reduced earnings from such jobs (by about \$2,500). (An appendix defines independent variables.) (YLB)

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First Impact Analysis of the Washington State Self-Employment and Enterprise Development (SEED) Demonstration



Unemployment Insurance
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First Impact Analysis of the Washington State Self-Employment and Enterprise Development (SEED) Demonstration



Unemployment Insurance
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**DOES
SELF-EMPLOYMENT
WORK FOR THE UNEMPLOYED?**

**First Impact Analysis of the
Washington State Self-Employment
and Enterprise Development (SEED) Demonstration**

December, 1993

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ABSTRACT

The Washington State Self-Employment and Enterprise Development (SEED) Demonstration was the first federally-sponsored self-employment demonstration program for unemployed workers in the United States. The primary purpose of the SEED Demonstration was to determine the viability of self-employment as a reemployment option for recipients of Unemployment Insurance (UI) benefits who do not have immediate job prospects. Other objectives of the demonstration included determining whether the program provided benefits to participants in the form of accelerating reemployment, increasing business startups, increasing the duration of self-employment, increasing total employment and increasing total earnings.

The SEED Demonstration was implemented in six sites, representing both rural and urban areas of Washington State, from September 1989 through March 1991. To obtain an accurate assessment of the impacts of this self-employment program, the SEED Demonstration was implemented as a classical experiment, in which eligible program applicants were randomly assigned either to a treatment group or to a control group. Those assigned to the treatment group were offered business startup training, a waiver of the UI work search requirement, and periodic payments equal to their regular (bi-weekly) UI benefits. In addition, treatment group members who achieved all project requirements were also eligible for a lump-sum payment equal to their remaining UI benefits. Those assigned to the control group, on the other hand, received regular UI benefits and services. A total of 755 applicants were randomly assigned to the treatment group and received services through SEED and 752 were assigned to the control group.

This report presents interim estimates of the impacts of SEED on the employment and earnings experiences of program participants based primarily on data from a followup telephone survey that was conducted approximately 21 months after random assignment. The interim impact results, measured as differences in outcomes between the treatment and control groups, indicate that the SEED Demonstration dramatically increased the likelihood of being self-employed (by 25 percentage points), accelerated entry into self-employment (by six months) and increased earnings from self-employment over the observation period (by about \$3,000). In contrast, the SEED Demonstration generally had negative impacts on wage and salary outcomes. Specifically, it delayed reemployment in a wage and salary job (by one month) and reduced earnings from such jobs (by about \$2,500). Combining self-employment and wage and salary outcomes, we find that during the 21-month observation period SEED increased the likelihood of being employed (by about five percentage points) and increased total time employed (by about two months), but had no impacts on total earnings. A preliminary examination of SEED's impact on job creation indicates that SEED significantly increased the employment of family members, but did not significantly increase the employment of non-family members.

These interim results indicate that self-employment programs like SEED represent viable policy tools for promoting the rapid reemployment of UI claimants. The question of the cost-effectiveness of such a policy tool, however, remains unanswered and will be addressed in the final report.

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EXECUTIVE SUMMARY

The Washington State Self-Employment and Enterprise Development (SEED) Demonstration was the first federally-sponsored self-employment demonstration program for unemployed workers in the United States. This report presents interim estimates of program impacts of SEED on the employment and earnings of program participants. As such, this report provides policymakers with the first assessment of a reemployment program designed to assist unemployed workers to become self-employed. Estimates of longer-term program impacts of SEED on employment, earnings, benefits receipt, and an analysis of program costs and benefits, will appear in a final report scheduled for 1994.

A second self-employment demonstration, the Massachusetts Enterprise Project, was also sponsored by the U.S. Department of Labor. A report comparing the early results from the Washington demonstration with the early results from the Massachusetts demonstration will be available in early 1994.

THE SEED DEMONSTRATION

The primary purpose of the U.S. Department of Labor (DOL) in sponsoring the SEED Demonstration was to test the efficacy of self-employment as a reemployment option. Additional objectives of the SEED Demonstration included testing a number of primary hypotheses including, whether the program provided benefits to participants in the form of accelerated reemployment, increased business startups, increased duration of self-employment, increased total employment, and increased total earnings.

To obtain an accurate assessment of the effects of this self-employment program, the SEED Demonstration was implemented as a classical experiment, in which eligible program applicants were randomly assigned either to a treatment group or to a control group. Those assigned to the treatment group were provided self-employment assistance (training and financial

assistance) while those assigned to the control group continued to receive regular Unemployment Insurance (UI) benefits and services but were not provided with self-employment assistance. This experimental design assures that the two groups do not differ systematically except in their access to program services. The impact of SEED training and financial assistance may then be measured as simple differences in outcomes between the two groups.

The claimants who were randomly assigned to the treatment group were offered three inter-related program services:

- Business startup training and technical assistance (including classroom training, individual counseling, and peer support);
- A waiver of the UI work search requirement which allowed them to continue to receive regular UI benefits while pursuing self-employment; and
- Financial assistance in the form of continued UI benefits and a lump-sum payment (to help with business startup costs and living expenses).

The lump-sum payments were made only to those participants who met specific program milestones indicating they were prepared to start their business; the amount of the payments were equal to the remaining UI benefits available when the milestones were achieved. Although the lump-sum component of the SEED Demonstration was intended to simulate a cash-out of UI benefits, because UI is an entitlement program and these benefits could not be denied for demonstration purposes, it was not strictly possible to test a cash-out policy. Operationally, this meant that participants could return to the regular UI program after receiving their lump-sum payment (paid out of Federal research funds) and draw the remainder of their UI entitlement in the form of bi-weekly payments provided they met the normal UI eligibility requirements, including the work search requirement. However, because very few demonstration claimants returned to UI after receiving their lump-sum payment, it appears that our results approximate what would have happened with a cash-out of UI benefits.

DATA SOURCES

The analysis in this interim report is based largely on data from a followup telephone survey conducted, on average, 21 months after random assignment. The response rate to the

telephone followup survey was 80 percent, yielding 604 treatment and 600 control group respondents. A second followup survey was recently completed. For the final report, information from both surveys will be combined to yield a total observation period of approximately three years after random assignment.

In addition to survey data, we use administrative records from state agencies and from the UI system to evaluate a variety of key outcomes. These administrative records serve to supplement the survey data in the analysis of employment and earnings outcomes. They also serve as the main source of information for the analysis of such outcomes as UI benefits receipt and state taxes paid by program participants.

DEMONSTRATION IMPLEMENTATION RESULTS

The SEED Demonstration was implemented in six sites, representing both rural and urban areas of Washington State, from September 1989 through March 1991. During the demonstration period, the Washington economy was strong and relatively insulated from the recession that affected other states. A total of 755 applicants were randomly assigned to the treatment group and 752 were assigned to the control group.

An implementation and process analysis was completed in August 1991. The highlights from the earlier report and analysis of followup survey data on program experiences are included in Chapter 4 and are summarized below.

- Of the 42,350 targeted new UI claimants who received an invitation letter to attend a meeting about the SEED Demonstration, 7.5% attended the meeting and 4.6% submitted an application to participate in SEED.
- The SEED recruitment and intake procedures were implemented as designed, with individuals, on average, being randomly assigned within four weeks from their effective date of UI claim.
- The 1,507 claimants who were randomly assigned (755 treatments and 752 controls) represent 3.6 percent of the targeted UI claimants.
- Demonstration participants tended to be older, more educated, more likely to be in professional, managerial or technical occupations and had higher pre-claim earnings than the broader group of targeted claimants. In addition, many had a working spouse and substantial assets.

- Treatment group members received training services, on average, within 5.5 weeks after their effective date of claim.
- Business training services were provided consistently across all six demonstration sites and participants who attended business training modules and individual counseling sessions gave both the sessions and the instructors high ratings.
- Approximately 60 percent (451 out of 755) of the treatment group received a lump-sum payment equal to their remaining UI benefits by achieving five milestones: completing the training program, developing an acceptable business plan, establishing a business bank account, satisfying all licensing requirements, and obtaining adequate financing for the proposed business.
- The average lump-sum payment was \$4,225, and the average length of time after random assignment until receipt of this payment was 7.8 weeks.
- The most common use of lump-sum payments was for business start-up expenses.
- Among treatment group members who received specific SEED services, the aspects of the program they found most useful were waiver from the UI work search requirement, the lump-sum payment, and business training.

These results indicate that only a relatively small fraction of invited UI claimants were interested enough in self-employment to qualify for selection into the demonstration. Thus, while many people profess to be interested in self-employment, only a small proportion of claimants take advantage of a training and financial assistance program that offers the opportunity to pursue self-employment. The results also indicate that the demonstration program was implemented as designed and met the program objective of early intervention.

SELF-EMPLOYMENT IMPACTS

The SEED Demonstration was designed to assist new UI claimants who expressed an interest in self-employment to pursue their goal of becoming self-employed. Our impact analysis, therefore, measures the effects of SEED by calculating the difference in the outcomes of two groups of unemployed workers (the treatment and control groups), both of whom

expressed an interest in becoming self-employed and who applied to SEED, but only the treatment group was eligible to receive SEED program services. The impacts of SEED on the self-employment experiences of program participants are presented in Chapter 5 and are summarized below. All of the reported impacts are statistically significant, indicating that the impacts can confidently be attributed to the program. The main conclusions about SEED's impacts on self-employment experiences are:

- The SEED Demonstration increased the likelihood of being self-employed during the observation period by 25 percentage points. Specifically, 52 percent of the treatment group was self-employed at some time during the observation period as compared to 27 percent for the control group.
- Demonstration services had a greater impact in raising the likelihood of self-employment for females than for males.
- Treatment group members' entry into self-employment was accelerated by approximately six months.
- Both treatment and control group members tended to start businesses in the service industry sector.
- Availability of demonstration services did not affect the survival rate in self-employment; approximately one-third of the businesses in both the treatment and control groups failed in the first year of self-employment.
- Total time in self-employment was increased by approximately four months over the entire follow-up period.
- Total earnings from self-employment was increased by approximately \$3,000 over the observation period.
- Average gross monthly earnings from self-employment was increased by approximately \$150.

The above results indicate that SEED increased the likelihood and accelerated the timing of entry into self-employment, leading to higher self-employment earnings. It did not, however, affect the survival rate in self-employment.

WAGE AND SALARY EMPLOYMENT IMPACTS

Positive program impacts of SEED on self-employment outcomes may coincide with negative program impacts of SEED on wage and salary outcomes. For example, increased duration in self-employment may correspond with decreased duration in wage and salary employment. On the other hand, if the demonstration services provided treatment group members with increased awareness of their marketable skills and enhanced their self-confidence and employability, SEED could have a positive effect on wage and salary employment and earnings. The wage and salary employment experiences of program participants are presented in Chapter 6 and the highlights are briefly summarized below.

- SEED reduced the likelihood of wage and salary employment during the observation period by five percentage points. Specifically, 75 percent of the treatment group worked in wage and salary jobs at some time during the period, as compared to 70 percent of the control group.
- Treatment group members became reemployed in a wage and salary job approximately one month later than control group members and, over the entire observation period, worked one month less in wage and salary employment than control group members.
- SEED reduced total earnings from wage and salary employment over the observation period by approximately \$2,500.
- The SEED program had no impact on average monthly earnings from wage and salary employment.

The above results indicate that SEED delayed reemployment in a wage and salary job by approximately one month and that over the course of the 21-month observation period, treatment group members were unable to recover the loss of this one-month delay. As a result, their wage and salary earnings during the observation period were reduced by approximately \$2,500.

IMPACTS ON TOTAL EMPLOYMENT AND EARNINGS

As reported above, the SEED Demonstration had significant positive impacts on a number of self-employment outcomes. It also had negative impacts on various wage and salary outcomes. To assess the net impact on total employment and total earnings, in Chapter 7 we

analyze the combined self-employment and wage and salary experience of treatment and control group members. The main findings include:

- SEED increased the likelihood of employment (either wage and salary or self-employment) during the observation period by approximately five percentage points.
- Treatment group members worked approximately two months more in total during the observation period than control group members.
- SEED had no significant impact on total earnings or on average monthly earnings during the observation period.

Thus, SEED had significant positive impacts on the likelihood of employment and the duration of employment during the observation period, but did not significantly affect combined earnings from wage and salary employment and self-employment.

IMPACTS USING ADMINISTRATIVE DATA

The above impact results were based on survey data and represent our best estimates of the impacts of the SEED Demonstration on employment and earnings outcomes. To enhance our ability to analyze several of the key study outcomes, additional data were obtained from administrative sources. These administrative data were used to examine demonstration impacts on business activity, on state tax payments and on UI benefit receipt. The main findings from the impact analysis using administrative data are presented in Chapter 8 and summarized below.

- SEED increased the likelihood of having a business and receiving business income.
- SEED did not affect the rate of business failure.
- Gross business income, state sales taxes and business and occupation taxes were significantly higher for the treatment group than for the control group.
- SEED did not affect the likelihood of working in UI covered employment at some time during the benefit year.

- Treatment group members worked fewer hours in UI covered employment and obtained lower earnings in UI covered employment than control group members.
- SEED reduced the length of the first spell of UI benefit payments by about six weeks.
- Although SEED reduced the length of UI benefit payments, it actually increased the amount of total benefits paid to treatment group members by slightly over \$1,000 per claimant. That is, after taking into account the lump-sum payments (paid from Federal research funds) treatment group members received an average of \$4,858 as compared to \$3,777 for the control group.

It is important to note that these findings derived from administrative records are consistent with the results based on survey data. This is particularly of interest, given the relatively low cost of using administrative data for program evaluation.

INDIRECT IMPACTS ON JOB CREATION AND JOB SATISFACTION

In addition to measuring the direct impacts of SEED on the employment and unemployment experiences of program participants, the demonstration may also have had additional, indirect impacts on employment. That is, by increasing the number of businesses created, the SEED Demonstration may have generated new jobs for nonparticipants. Since these jobs would not have existed without the additional businesses created, we may consider these new jobs an impact of the SEED Demonstration.

The SEED Demonstration may also have had indirect impacts on job satisfaction. If participants find self-employment more satisfying than wage and salary employment, then by increasing the number of self-employed individuals, the SEED Demonstration may have increased the level of job satisfaction among program participants.

In Chapter 9, we examine the indirect impact of SEED on job creation by comparing the employment level (other than the owners) in treatment group businesses with the employment level in control group businesses. We also provide information on job satisfaction by type of employment and the extent of differences in job satisfaction between the treatment and control groups. The main findings include:

- Within the 21-month followup period, SEED lead to the creation of 49 net new jobs for nonparticipants, in addition to the jobs created for the self-employed participants.
- SEED increased the employment of family members in the newly created businesses, but did not affect the employment of nonfamily members in the newly created businesses.
- SEED did affect the job satisfaction level of demonstration participants.

CONCLUSIONS

The results of this study indicate that the SEED Demonstration dramatically increased the likelihood of being self-employed, accelerated the timing of entry into self-employment, and increased earnings from self-employment. The study also indicates that the SEED Demonstration generally had negative impacts on wage and salary outcomes (i.e., delayed reemployment and reduced earnings from wage and salary employment). Combining self-employment and wage and salary outcomes, we find that the SEED Demonstration had significantly positive impacts on employment outcomes (increased likelihood of being employed and increased total time employed) and had no significant impacts on total earnings. An analysis of SEED's impact on job creation revealed a significant impact on the employment of family members but no impact on the employment of others.

Given these results, we believe that self-employment programs like SEED represent viable policy tools for promoting the rapid reemployment of UI claimants. The question of the cost-effectiveness of such a policy tool, however, remains unanswered and will be addressed in the final report.

PART I

OVERVIEW OF SEED DEMONSTRATION

1

INTRODUCTION

Over the past several years, the U.S. Department of Labor (DOL) has launched a series of demonstrations to investigate alternative uses of Unemployment Insurance (UI) that might expedite reemployment into wage and salary employment. These projects tested different service approaches including job search assistance, retraining, and relocation assistance. Several of the projects also incorporated reemployment bonuses, which provide payments to UI claimants who find jobs within a fixed period of filing their initial UI claim and keep those jobs for a specified length of time. The focus of all these demonstration projects has been to test different approaches that promote reemployment in traditional wage and salary jobs.

DOL has launched a series of demonstrations that promote self-employment for some unemployed workers. These innovative demonstrations test the use of self-employment programs as a reemployment strategy. Two demonstration projects, the Washington State Self-Employment and Enterprise Development Demonstration and the Massachusetts Enterprise Project were designed to test the ability of the employment security and economic development systems to help interested UI recipients start their own businesses. Both of these demonstrations provided business development assistance in the form of entrepreneurial training and business support services. They also provided participants with financial assistance while they made progress toward self-employment. In addition, the Washington project also provided financial assistance in the form of a lump-sum payment (paid from DOL research funds) equal to the remaining UI benefits available to participants at the time all program requirements were met.

THE WASHINGTON SELF-EMPLOYMENT AND ENTERPRISE DEVELOPMENT (SEED) DEMONSTRATION

The first federally-sponsored project in the U.S. to test the use of self-employment programs as a reemployment strategy was the Washington Self-Employment and Enterprise Development (SEED) Demonstration Project. The SEED Demonstration was initiated on a pilot basis in one site beginning in September 1989 and was then implemented in five additional sites in February 1990. Demonstration intake activities continued through early September 1990, with business support services available to demonstration participants through March 1991.

To allow rigorous evaluation of program effectiveness, the SEED Demonstration used a classical experimental design with random assignment of eligible claimants interested in starting their own businesses to the demonstration program (i.e., treatment group) or to a control group that received no demonstration services, but remained eligible for regular UI benefits. Using this design, the impacts of demonstration services and lump-sum payments can be measured directly by the difference in outcomes between the treatment and control groups. A total of 755 new claimants were enrolled in SEED in the six sites and offered demonstration services; 752 new claimants who applied to SEED were assigned to the control group.

The evaluation of the SEED Demonstration will provide policymakers with the first analysis of the efficacy of a program to assist unemployed workers interested in starting their own businesses. Inasmuch as the present report is the first to evaluate SEED program impacts, this report provides policymakers with the first indication of the effects of a self-employment program for UI claimants. A subsequent final report (scheduled for 1994) will evaluate program impacts over a longer observation period and will assess the benefits and costs of this self-employment program.

ORGANIZATION OF THE REPORT

The report is organized in four main parts. Part I includes Chapter 1 through Chapter 4, providing the reader an overview of the SEED Demonstration project and its implementation experiences. The details of the experimental and operational design of the SEED Demonstration are presented in Chapter 2. We first describe the recruitment and intake process, the random

assignment procedures, the program services, and the financial component of SEED. Next, we describe the site selection methodology and results. Then, we describe the details of the operational design of the demonstration, including administrative, organizational, staffing and training issues. The data systems developed for the demonstration are also briefly described.

Each of the data sources used in the interim analysis are described in Chapter 3. First, we describe the multiple administrative data sources used in support of this interim report. In particular, we describe the Participant Tracking System (PTS), an on-line database system developed by DOL, which provides data on personal characteristics, demonstration services, business information, and UI benefits information; the State UI Wage Records, which provide information on employment and earnings; and Department of Revenue (DOR) data, which provide information on pre-program and post-program business activity. We also describe the followup survey collected specifically for the evaluation of the SEED Demonstration. The contents of the survey and the procedures used in its administration are then reviewed in detail. Finally, we present an analysis of the response rates and describe the characteristics of the survey respondents.

Chapter 4 concludes the first part of the report with a description of the implementation of the demonstration. Specifically, we describe the flow of claimants from recruitment through application review and random assignment. We also provide information on the comparability of the treatment and control groups. We then describe the demonstration services that participants received and the timing of those services. Finally, we provide information on participants' assessment of the program services received.¹

Part II of the report consists of Chapter 5 through Chapter 7 and provides our interim estimates of the program impacts on key outcome measures related to employment and earnings. Chapter 5 focuses on the impacts of SEED on the self-employment experiences of program participants. First, we describe the characteristics of those who enter self-employment during the observation period. Next, we describe the types of self-employment enterprises operated by treatment group members. Following this descriptive analysis, we evaluate program impacts of

¹ A more detailed description of the implementation of the SEED Demonstration is given in Johnson, Terry R. and Janice J. Leonard Washington State Self Employment and Enterprise Development Demonstration Interim Report: Implementation and Process Analysis, August 1991.

SEED on the likelihood of being self-employed, survival rates, self-employment longevity, total time in self-employment, and earnings from self-employment.

In Chapter 6, we shift the focus to an analysis of impacts of SEED on wage and salary employment. First, we describe the characteristics of those who were employed in wage and salary jobs. Then we evaluate program impacts of SEED on the likelihood of being in a wage and salary job during the observation period. Program impacts on total time in wage and salary jobs and total earnings from these jobs are also assessed.

To assess the net impact on total employment and total earnings (i.e., from either self-employment or wage and salary employment), in Chapter 7 we analyze the combined self-employment and wage and salary experience of treatment and control group members. First, we investigate SEED's impacts on the likelihood of being employed at some time during the observation period, as well as at the time of the follow-up interview. We also examine the combined employment duration in either self-employment or wage and salary employment. Finally, we examine the impact of SEED on total earnings from either wage and salary employment or self-employment.

Part III, which includes both Chapters 8 and 9, provides information on other impacts of the demonstration. In Chapter 8, we supplement the findings from the survey data by providing estimates of the impact of SEED based on administrative data sources. Although we regard the impact results based on the survey data to represent our best estimates of impacts of SEED on employment-related outcomes, the results described in Chapter 8 provide valuable additional evidence on SEED's impacts on business experiences, including gross income, taxes paid, and earnings in covered employment. Administrative data are also used to estimate SEED's impacts on several measures of UI benefits received.

In Chapter 9, we examine SEED's indirect impact on job creation during the observation period by comparing the employment level of nonparticipants in treatment group businesses with the employment level of nonparticipants in control group businesses. We also provide evidence on the impact of the demonstration on job satisfaction.

The fourth (and final) part of the report describes the major conclusions from our interim analysis, which are presented in Chapter 10. That chapter highlights the main impact results derived from the survey data related to self-employment and wage and salary employment and

earnings outcomes. We also briefly discuss the implications of these results for future analysis and our plans for the final report.

EXPERIMENTAL AND OPERATIONAL DESIGN

The SEED Demonstration was designed to test the effectiveness of using UI funds to assist unemployed workers in developing and starting their own businesses. To meet this objective, an experimental design was developed in which new claimants interested in pursuing self-employment were recruited for the demonstration at the beginning of their unemployment spell. Eligible applicants were assigned to a treatment group that was offered business startup services and financial assistance or to a control group that received normal UI services. The research design also specified the frequency with which key demonstration activities were conducted and developed procedures for selecting six sites in which to implement the demonstration. In this chapter we describe each of these aspects of the experimental design of the SEED Demonstration.¹

A successful experimental design must also be accompanied by an administratively feasible operational plan. This involves issues related to program administration, organization, staffing and training, and a data system to support and document demonstration activities. Following the description of the experimental design, we briefly describe the operational design for the SEED Demonstration.

¹ A more detailed description of the design of the SEED Demonstration is presented in Orr, Larry L., Terry R. Johnson, Mark Montgomery and Marie Hojnacki, Design of the Washington Self-Employment and Enterprise Development (SEED) Demonstration, June 1989 and in Johnson and Leonard (1991).

EXPERIMENTAL DESIGN

Demonstration Intake

The process of developing an appropriate experimental sample of SEED Demonstration participants from the universe of UI claimants involved four steps. The demonstration intake process began with the **targeting** of those UI claimants who were of most interest to the designers of self-employment policy. The second step was the **recruitment** of those targeted claimants who were interested in participating in the demonstration. The third step was the **screening** out of certain individuals from among those targeted claimants who applied to the demonstration. The resulting group of eligible applicants was then divided into a treatment group and a control group using **random assignment**. Exhibit 2.1 illustrates this four-step process and below we provide additional details concerning how each of these elements was incorporated into the demonstration design.

Targeting. Because a major goal of the SEED Demonstration was to offer the self-employment option as early as feasible in an individual's unemployment spell, it was decided to target the demonstration on new UI claimants (i.e., individuals filing a claim for a new benefit year). In addition, it was recognized that the program was not intended to serve the entire population of new UI claimants in the selected sites and that there were good reasons to exclude certain claimant subgroups. As a result, it was decided to target the SEED Demonstration on new UI claimants, with the following exclusions:²

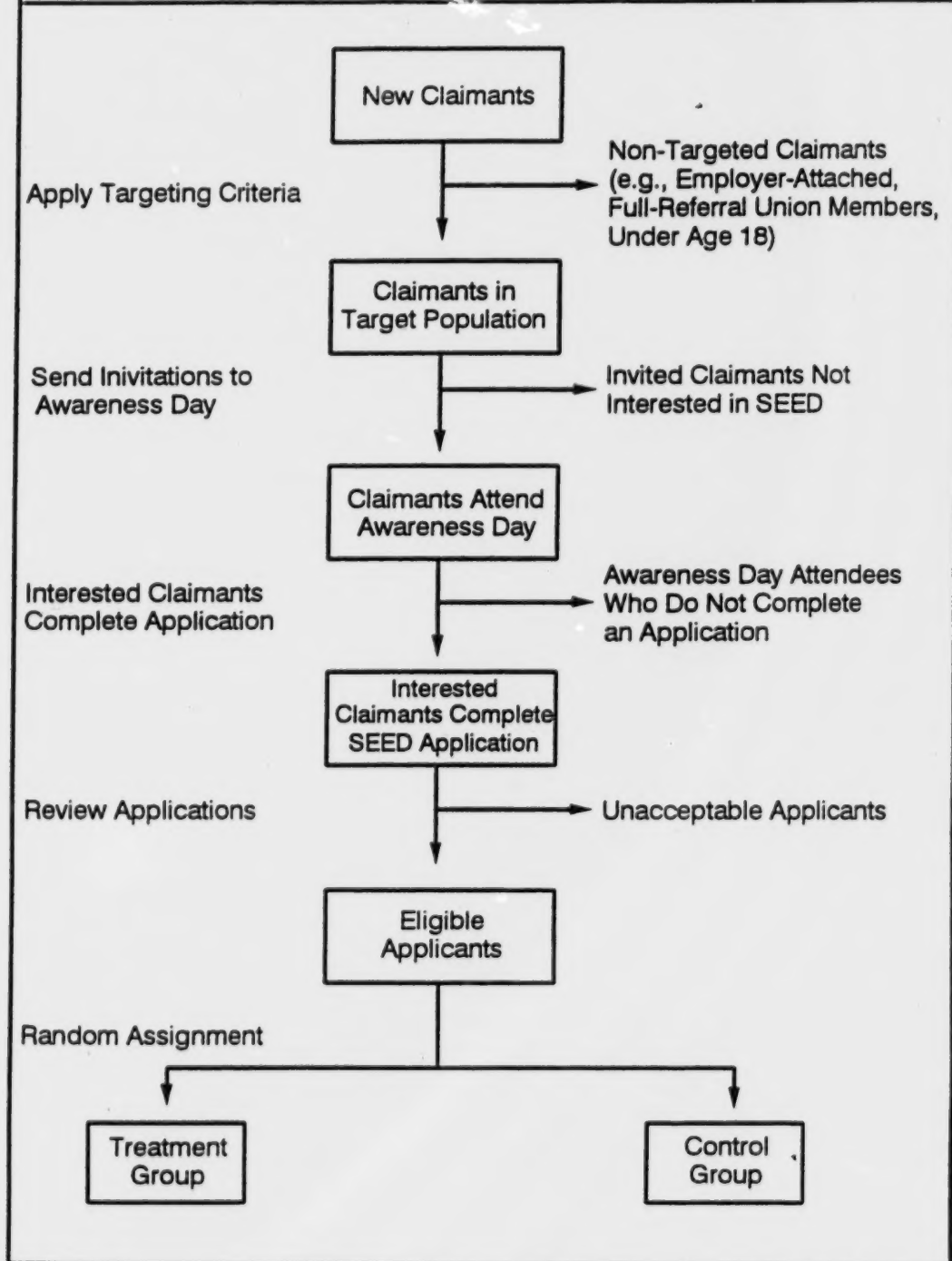
- Persons filing interstate claims;
- Persons filing claims backdated more than 14 days;
- Claimants who were employer-attached (i.e., on standby) or who were full-referral union members; and
- Claimants under 18 years of age.

In addition, claimants who were not monetarily and nonmonetarily eligible for UI benefits at the time of random assignment were excluded from the demonstration.

Recruitment. The next step in the SEED intake process involved recruiting those claimants interested in self-employment into the demonstration. The first step in the recruitment

² The rationale for each of these exclusions are presented in Johnson and Leonard (1991).

Exhibit 2.1 SEED Intake and Assignment Process



process involved sending a personalized invitation letter to targeted claimants that invited them to attend a meeting where they could find out more about the SEED program.³ The invitation letter was sent within a few days after the claim was filed.

The second step in the recruitment process was the Awareness Day meeting. The purpose of this meeting was to provide interested claimants with information about the demonstration so they could make informed decisions about whether to apply to the program. During the meeting, claimants were provided basic information about the risks and rewards of self-employment and the key features of the SEED program were described. This included participation requirements, random assignment, the business support services offered, and the financial assistance that would be provided to selected participants. Two videos were used to cover these issues and ensure that interested claimants in all sites received the same basic information. In addition, the Awareness Day Coordinator was available to answer questions claimants had about the program.

At the conclusion of the meeting, SEED application packets were provided to interested attendees and instructions for filling out the application were given. The SEED application packet was designed to serve three primary functions:

- To facilitate self-screening through a self-assessment questionnaire;
- To obtain the informed consent of potential participants; and
- To obtain valuable baseline information and additional contact information on potential participants.

Those invited claimants who did not attend Awareness Day or did not complete the application package were excluded from the demonstration. Invited claimants who attended Awareness Day and submitted the application packet in a timely manner (within seven days) were potentially eligible for the demonstration, provided they had a valid UI claim and their proposed business met certain requirements as described below.

³ The letters were generated by the State UI mainframe computer. By using personalized letters as the mechanism to inform claimants of the demonstration, we could adjust the fraction of the target population invited to participate and thus better control the flow of demonstration applicants.

Screening. The primary form of screening used to obtain participants for the SEED Demonstration was self-screening.⁴ This self-screening began at the invitation to attend Awareness Day. Individuals who chose not to attend could not receive program services or benefits. The SEED application also served a self-screening function as it included a number of self-assessment questions and questions about assets and debts that may have affected an individual's decision to apply to the program.

The only active screening that was performed involved reviewing the application to make sure that the proposed business idea was legal in the state and that the business met the requirements that the claimant was in day-to-day control of the business and was making a full-time commitment to starting a business.⁵ It should be emphasized that no screening was done based on any judgment about the merits of the business idea itself.

Random Assignment. As the above process indicates, new claimants eligible for SEED had to receive an invitation letter, attend Awareness Day, submit a complete (and valid) business idea, and be monetarily and nonmonetarily eligible to receive UI benefits. Eligible claimants were then randomly assigned to either the treatment group, which was offered all demonstration services and was eligible to receive self-employment allowances, or to a control group, which received regular UI payments and services but no demonstration services or allowances.⁶ In large samples, the random assignment process should create two groups of claimants that are otherwise similar, except that one is eligible for demonstration services and the other is not. Using this experimental design, the impact of the SEED Demonstration may be estimated by the difference in outcomes between the treatment and control groups.

Program Components

The claimants who were randomly assigned to the treatment group were offered the following three program components:

⁴ The decision to rely on self-screening was made in recognition of the great difficulty involved in identifying personal characteristics that are good predictors of business success.

⁵ In addition, multi-level (pyramid) marketing schemes were not allowed in the demonstration. Franchises were allowed as acceptable businesses, provided they met the other conditions.

⁶ The random assignment program -- based on a random number generator -- was applied once a week to the pool of eligible applicants. The program assigned eligible claimants to the treatment or control group in a 1:1 ratio.

1. Business startup services to provide training and technical assistance in self-employment;
2. A waiver of the UI work search requirement; and
3. Self-employment allowances and a lump-sum payment (to those who met specific milestones), to help with living expenses and other business startup costs.

Below we describe these three components of the SEED Demonstration.

Business Startup Services. As indicated in Exhibit 2.2, the business startup assistance component of SEED consisted of a variety of services, including:

- Classroom training;
- Individual counseling to help develop a business plan and other counseling services; and
- Peer group support through an Entrepreneur Club.

The design of the program incorporated substantial flexibility in providing participants with as much or as little business startup assistance as they required. Some participants needed considerable education and training, as well as ongoing support while developing their business plan. Others with experience in operating a business or with specific skills (e.g., marketing, accounting) needed a fraction of these services. The design of the program accommodated both types of participants by providing flexibility in the decisions about the level of training required.

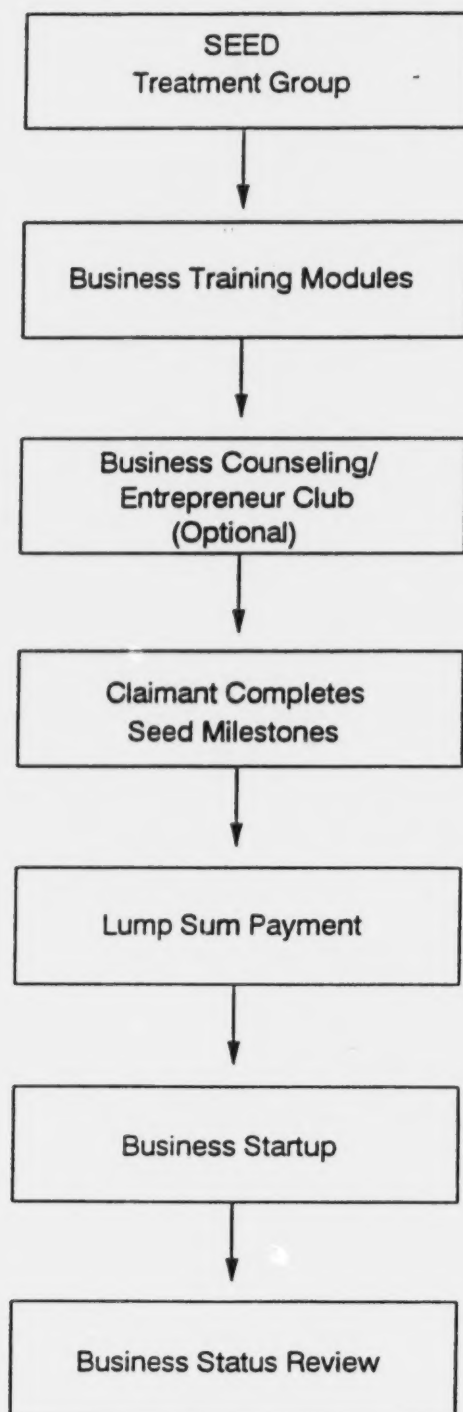
The first component of the business startup assistance was self-employment training. Within one to two weeks after random assignment, treatment group members were scheduled to attend a set of four business training modules covering the following topics:

- Business feasibility;
- Marketing;
- Finance and accounting; and
- Organization and management.

In total, approximately 20 hours of classroom time were spent covering these topics over four days during a one-week period. Attendance at the first module was required, in part to ensure

Exhibit 2.2

Business Startup Services



the signing of the participation agreement.⁷ Although eligibility for the lump-sum payment required attendance at subsequent modules as well, business development specialists had the authority to waive attendance in cases where the participant demonstrated specific expertise.

The training modules introduced claimants to the need for developing a comprehensive business plan. Individualized business plans were then developed by participants with the assistance of their business development specialist. Additional assistance in developing a business plan was offered through the Entrepreneur Club meetings which were scheduled monthly. These meetings provided participants with peer support and advice throughout their demonstration participation.

The business development specialists served the role of case managers. To ensure that these specialists had a proactive role in this process, it was required that they attempt to contact all participants at least once during the first few weeks after the training modules to discuss progress and offer counseling assistance. In addition to providing ongoing counseling, the role of the business development specialist included reviewing each participant's progress in achieving the five program milestones that were required to receive a lump-sum payment (the five milestones are presented in the next section). The demonstration design included a "milestone review" interview conducted by the business development specialist to determine if all milestones were attained, as well as to identify any areas where additional assistance was required.

After business startup, the business development specialist was to provide counseling and technical assistance on an as-needed basis. Approximately two months following receipt of the lump-sum payment, a business status review was conducted. This review provided the business development specialist with an opportunity to determine whether additional assistance was required.

Work Search Waiver. To provide participants in the SEED Demonstration a stream of income during the business planning period, claimants received regular periodic self-employment allowance payments equal to their UI Weekly Benefit Amount (WBA). While receiving these payments, participants had their UI work search requirement waived. This waiver freed SEED

⁷ The participant agreement included a list of project requirements and a list of program services. In signing this agreement, the claimant waived all claims against the project for financial losses.

participants to pursue their business plans rather than actively search for employment (as normally required for UI recipients).

The demonstration design set the initial duration of these periodic payments and the work search requirement waiver at 10 weeks, or sooner if the participant achieved the milestones for receiving the lump-sum payment. A couple of weeks before the waiver was to expire, treatment group members who had not met all milestones were sent a letter instructing them to contact their business development specialist for an End of Waiver Period Review. The purpose of the End of Waiver Period Review was to assess the progress of SEED participants in achieving the five milestones and to determine whether the work search waiver should be extended. The business development specialist could extend the waiver (for up to a few weeks) if the participant was judged to be making satisfactory progress on business startup activities. If the waiver was not extended, however, participants would either have to meet the work search requirement (and other UI eligibility requirements), or stop receiving UI benefits.

Lump-Sum Payment. In addition to the bi-weekly UI payments received while engaged in business startup activities, treatment group members were eligible for a lump-sum payment when they completed five specific milestones:

- Completed the training modules;
- Developed an acceptable business plan;
- Set up a business bank account;
- Satisfied all licensing requirements; and
- Obtained adequate financing.

The lump-sum payment was equal to the participant's remaining UI entitlement at that time. Because the remaining entitlement at any point in the claim is the maximum benefits payable less the amount of UI benefits already paid out in the form of bi-weekly payments, the amount of the lump-sum payment depended on the participant's UI entitlement, as well as the time taken to achieve the milestones.

Although the lump-sum payment component of the SEED Demonstration was intended to simulate a cash-out of UI benefits, it was not strictly possible to test a cash-out policy. This was because UI is an entitlement program that could not be denied for demonstration purposes. Operationally, this meant that participants could return to the regular UI program after receiving their lump-sum payment, and draw the remainder of their UI entitlement in the form of bi-

weekly payments provided they met the normal UI eligibility requirements, including the work search requirement.⁸ Because most treatment group members who receive a lump-sum payment are likely to be committed to self-employment, we did not expect many of these claimants would return to UI and collect their remaining entitlement. Our findings that confirm this expectation are described in Chapter 8.

Frequency of Key Demonstration Activities

An important component of the SEED experimental design was the consistency of demonstration activities across sites and over time. To maximize the consistency of demonstration activities, a common frequency of activities was imposed across all sites. Specifically, in each site, Awareness Day meetings were conducted bi-weekly (every other Friday); random assignment was conducted weekly (each Thursday); and the business training modules were offered bi-weekly (typically Thursday and Friday of one week and Monday and Tuesday of the following week).

Given this schedule of activities, the typical sequence of events for a targeted new claimant was as follows:

- Filed initial claim and receive invitation to Awareness Day (Week 1)
- Attended Awareness Day meeting (Week 2-3)
- Submitted SEED application packet (Week 3-4)
- Random assignment (Week 4-5)
- Attended business training modules (Week 5-6)

This sequence of events was designed to meet the early intervention objective of the demonstration.

Site Selection

The selection of demonstration sites was a critical factor in determining the generalizability of the demonstration findings to a broader (e.g., statewide) population. To enhance the generalizability of the results, it was important that the sites selected yield a representative sample of the State UI claimant population. In addition, the sites had to provide a sufficient number of SEED participants to allow precise estimation of demonstration impacts

⁸ Because the lump-sum payments were paid out of Federal research funds -- not State UI funds -- they did not affect a participant's UI net balance available.

and be consistent with the demonstration budget constraint and field constraints on implementation of the demonstration. As described in detail in our design report (Orr et. al., 1989), we used a purposive site selection method -- based on an index of representativeness -- to select a set of sites that best represented the state population of UI claimants and that also met the operational needs of the demonstration.⁹

For our purposes, a site was defined as a county or group of counties. We selected a set of six sites (representing 18 counties) from 13 potential demonstration sites that represented groups of 32 counties throughout the state.¹⁰ The six sites selected, and the number of counties and Job Service Centers included in each, are as follows:

- Vancouver (5 counties, 3 JSCs)
- Olympia (4 counties, 3 JSCs)
- King County (1 county, 5 JSCs)
- Snohomish (2 counties, 2 JSCs)
- Wenatchee (3 counties, 2 JSCs)
- Yakima (3 counties, 4 JSCs).

In Table 2.1, we provide information on the overall economic situation in Washington State and in these six sites at the time the SEED Demonstration was implemented.

The SEED Demonstration was implemented during a period in which the Washington State economy was quite strong overall and somewhat insulated from the recession that occurred in other parts of the United States. As indicated in the table, statewide, the unemployment rate

⁹ The index incorporated information on several claimant and site characteristics that were thought to be important determinants of the outcomes of a self-employment demonstration. The claimant characteristics included age, education, race/ethnicity and industry of most recent employer. The index also took into account site factors such as the insured unemployment rate, population size, average monthly wage, region of the state, and number of business service providers.

¹⁰ Benton and Franklin counties were excluded because a major layoff at the Hanford nuclear power site resulted in a large, temporary increase in funds to aid unemployed workers, which made the service environment in this area quite atypical. Five other counties were excluded because their populations were too small to support the demonstration. It should be noted, however, that individuals who lived in these excluded counties could receive an invitation letter to attend Awareness Day and potentially participate in SEED if they filed their UI claim in one of the Job Service Centers in the six study sites.

Table 2.1
Characteristics of SEED Sites

Site Characteristics	Site						
	Vancouver	Olympia	King County	Snohomish County	Wenatchee	Yakima	Statewide
Population (1990)	314,580	323,500	1,482,800	509,400	108,700	224,120	4,798,100
Percent of State Population	6.5	6.7	30.9	10.6	2.3	4.7	100.0
Average Monthly Wage (1989) (\$)	1,600	1,578	2,050	1,605	1,578	1,373	1,800
Per Capita Income (1988) (\$)	13,646	13,442	20,624	15,422	14,403	13,154	16,468
Total Number of Employer Units (1989)	7,723	8,268	48,881	10,807	3,659	6,026	128,525
Civilian Labor Force (1989)	167,894	146,850	870,600	253,330	58,200	116,476	2,451,110
Unemployment Rate (1989)	6.7	7.8	4.5	4.8	10.5	11.6	6.2

was 6.2 percent in 1989.¹¹ This economic strength, however, was not uniform throughout all areas of the state. In particular, since the recessions of the early 1980's, the metropolitan areas of the state, particularly the north-south I-5 corridor that runs from Vancouver, Canada, through Seattle and on to Portland, Oregon, have had strong economies and vibrant growth, while many rural and more sparsely populated regions of the state (often dependent on resource-based industries) have continued to experience weak economies and high unemployment rates. This can be seen in the somewhat lower average monthly wages and higher unemployment rates for the two most rural sites (Wenatchee and Yakima), while the remaining sites generally fare far better. Additional information on each of the six sites is provided in Johnson and Leonard (1991).

OPERATIONAL DESIGN

To successfully implement the evaluation design described above required an administratively feasible operational plan that ensured the demonstration services were provided uniformly across the sites selected according to the design. To provide the staff and management expertise needed for the administration and operation of the program, a cooperative agreement was established between the Washington State Employment Security Department (ESD) and the Business Assistance Center (BAC), a division of the Washington State Department of Trade and Economic Development. Each agency provided key staff members who participated in the demonstration from the design phase through the completion of program services.

A major organizational feature of the SEED Demonstration was management of key elements of the program by a centralized staff. This management function was performed by personnel from the ESD's UI Program Analysis Division. Awareness Day meetings were conducted in each site by local Job Service Center (JSC) staff. Business Development Specialists (BDSs), hired and supervised by BAC staff, provided business support services to demonstration program participants. Below we briefly describe the roles and responsibilities of each of these groups.

¹¹ The statewide unemployment rate fell to 4.9 percent in 1990.

SEED Project Unit

Personnel from the UI Program Analysis Division staffed the SEED Project Unit.¹² Operating from ESD's central office in Olympia, this small group, consisting of a project director, manager and coordinator, had overall responsibility for operations and management of the SEED project. The SEED Project Unit had operational responsibility for many of the key demonstration activities required to manage the SEED Demonstration, including training site staff in program-related procedures, overseeing the targeting and recruitment of claimants, reviewing project applications, running the automated random assignment program and approving lump-sum payments to claimants who completed the five project milestones.

Awareness Day Coordinators

ESD provided the personnel and space to conduct the Awareness Day meetings at one of the local Job Service Centers in each site. Awareness Day meetings were conducted by a JSC staff person who was designated as the Awareness Day Coordinator and assigned to the project for the duration of the demonstration. Each coordinator spent approximately three hours per week on demonstration activities. All coordinators had previous experience conducting employment orientation sessions and were selected for the demonstration on the basis of their ability to make presentations to large groups.

Local JSC Office Staff

With the exception of the Awareness Day Coordinators, the SEED Demonstration imposed no new responsibilities on staff members of the local JSC offices. Local office staff were encouraged to direct inquiries about the demonstration to the SEED Project Unit in Olympia through use of the project's toll-free telephone number. Local staff were also asked not to encourage interest in the project among claimants since the project could not accept volunteers who did not receive an invitation letter.

Business Assistance Center (BAC) Staff

BAC staff worked with personnel from ESD in planning and implementing the SEED Demonstration, as well as in establishing links with the economic development community in

¹² This unit had considerable experience in conducting research projects using experimental design, including a recent work search experiment in one site and a reemployment bonus experiment in many sites throughout the state. This must be kept in mind in assessing the administrative and operational resources required to conduct a demonstration program like SEED.

each site. They worked with local business assistance providers such as the Economic Development Councils and the Small Business Development Centers to recruit and hire Business Development Specialists (BDS) for the SEED Demonstration. They developed the curriculum for the business training modules and supported the Business Development Specialists at each site throughout the demonstration by providing training and management support, and supplying the business training materials and forms, and the computers and software that each BDS used to record program services. BAC staff also monitored the BDSs' activities for compliance with the demonstration design.

Business Development Specialists

The business development specialist resources available to SEED participants varied across the sites to meet the expected flow of demonstration participants. Staff hired to provide business services for SEED participants represented a variety of business backgrounds including banking, corporate management, the retail grocery business, small business consulting and investment consulting. Each had knowledge of the local business community and were familiar with the local economies. Most had previous experience teaching small business seminars or providing consulting services to small businesses. Two were recruited from the Small Business Administration's Senior Core of Retired Executives (SCORE) and one had previously worked with a Small Business Development Center (SBDC).

Participant Tracking System

The centralized data system used to support the operations of the SEED Demonstration was the Participant Tracking System (PTS) that was developed by ADP staff of the U.S. Department of Labor. The PTS was an on-line database system that provided ongoing information about project participants and services. As described briefly below, the PTS performed numerous functions and was an important component of the demonstration.

The personalized letters sent to targeted claimants inviting them to attend the Awareness Day meeting incorporated the Awareness Day scheduling data contained in the PTS. The PTS also generated letters to inform applicants of their selection or non-selection into the project. Data about the claims status of participants was passed from the BAS mainframe computer to the PTS three times each week to update the PTS system as to the status of the participant's UI claim.

The PTS was also linked to the BAC computer to support data transfer. Information from the BAC system was telecommunicated to the PTS in a weekly data exchange. These data included information on business assistance services provided to claimants in the treatment group (e.g., counseling and review of milestones).

In addition to its linkages to BAS and to the BAC computer to support the demonstration, the PTS maintained project data from applications and other sources and performed a number of specific functions, including:

- Random assignment to treatment and control groups;
- Generated several different types of letters to SEED participants (e.g., results of random assignment, end of waiver notification, two-month business status review notification);
- Calculated the lump-sum payment amount; and
- Produced more than 20 project monitoring and tracking reports.

As such, the PTS supported SEED Demonstration operations and provided valuable information for monitoring and evaluation purposes.

DATA SOURCES

The results of the interim analyses of the impacts of the SEED Demonstration described in subsequent chapters are based on data from several sources. In particular, we obtained information from multiple sources of administrative records, as well as follow-up surveys of participants and control group members. In this chapter we describe the data sources used to support the results presented in this report.

ADMINISTRATIVE RECORDS

The evaluation of the SEED Demonstration was based on three sources of administrative records. In addition to data from the Participant Tracking System (PTS), which was collected to serve both operational and analytic goals, the analysis included UI Wage Records and Department of Revenue (DOR) data. Below we describe these administrative data sources and the types of information obtained from each source.

Participant Tracking System

The Participant Tracking System was designed, developed, and implemented by ADP staff at DOL. The PTS was a source of several important data items for the evaluation for individual demonstration participants. As described below, the PTS provided four main categories of data for the evaluation: (1) individual characteristics; (2) SEED Demonstration services data; (3) business establishment data; and (4) UI payments received:

Individual Characteristics

- Demographic characteristics (e.g., age, race, sex, education) and UI eligibility information (e.g., weekly benefit amount, maximum benefits payable) at time of filing for UI benefits as recorded on the UI application.
- Supplemental personal characteristics data from the SEED application, including answers to self-assessment questions, family and employment background information, assets, debts, previous business experience, proposed business idea and contact information.

SEED Demonstration Services Data

- SEED business services received (e.g., counseling, participation in Entrepreneur Club meetings).
- SEED financial assistance received (e.g., lump-sum payment date and amount).

Business Establishment Data

- Business establishment data (e.g., when business established, business type, industry).
- Information from two-month business status review conducted by the business development specialist.

UI Payments Received

- Weeks paid.
- Benefits received.

The first category includes valuable information on the background characteristics of demonstration participants at the time they entered the demonstration. Some of these data were used in the previous chapter to describe the group of claimants targeted for the demonstration, as well as to examine the comparability of the treatment and control groups. These data will also be useful in developing control variables for the impact analysis described in subsequent chapters.

The data concerning business assistance services and financial assistance provided to SEED treatment group members were summarized in the previous chapter. This information

helps understand how the demonstration was implemented, and the nature and extent of the demonstration-related services received by treatment group members. This is useful in interpreting the results of the impact analysis.

For the most part, the results presented below do not directly incorporate information from the PTS concerning business establishments or the two-month business status reviews conducted by the business development specialists. Because this information is available only for the subset of treatment group members who established businesses during the demonstration operation period, and only includes short-term subjective information for those businesses, we rely instead on other sources (e.g., survey data, Department of Revenue data) that are available for both treatment and control group members and for a longer time period. A summary of the short-term business establishment results from these data sources is described in Johnson and Leonard (1991).

The final category of PTS data concerns experiences with the UI system following the filing of a new claim and enrollment in the demonstration. This information enables us to develop outcome measures for both the treatment and the control groups concerning the UI system during the benefit year of the experiment, as well as benefits received from new claims or extended benefits. In addition to summary measures of indicators of UI outcomes for the benefit year (e.g., total weeks paid, total benefits received, whether exhaust benefits), we were able to develop measures of spells of UI benefit receipt during the experiment.

UI Wage Records

A second source of administrative records for the evaluation are State UI Wage Records that are reported by employers on a quarterly basis. For the evaluation, we obtained quarterly information on the total wages and hours worked of employees in covered employment during both the immediate pre-program and post-program periods. In particular, we obtained information on wages and hours worked in covered employment for the five full calendar quarters before the individual filed a new claim and entered the demonstration, for the quarter the claim was filed, and for the following five calendar quarters. These data were used to construct key outcome measures of employment and earnings experiences, as well as control

variables.¹ In addition to providing an important source of supplemental employment and earnings outcomes information, the UI Wage Records data also enabled us to determine the Standard Industrial Classification (SIC) code of the employer, as well as whether the claimant returned to work for the same employer after the demonstration.²

UI Wage Records have several potential advantages over survey data for measuring earnings received from wage and salary employment. For example, UI records are not subject to interviewer bias or respondent recall error. Also, these data are not subject to problems that arise from some respondents reporting net (after-tax) earnings, and others reporting gross (before-tax) earnings. Moreover, they are not affected by response-rate problems.

Although the use of UI Wage Records has a number of advantages for the evaluation, it must be recognized that they do not include all earnings received by claimants.³ In particular, they do not include wages in uncovered employment, earnings from self-employment, or wages earned in other states. In general, self-employed individuals constitute the large majority of uncovered employment. Other types of uncovered employment include casual labor, religious organizations, newspaper deliverers, insurance agents and real estate agents paid on a commission basis only, and barbers/hairdressers.

A more important limitation of using UI Wage Records to develop measures of earnings from wage and salary employment arises for individuals who live near state borders. Because the system is state-based, it is impossible to distinguish individuals who work across the border

¹ Approximately 10 percent of the quarterly records had missing data on hours worked. In these cases, hours worked were imputed following a two-step procedure. For claimants with missing data in one (or more) of the five pre-experimental quarters, the person's average (real) hourly wage rate was computed during the entire pre-experimental period and applied to the total wages data in the specific period to impute hours worked for that quarter. A similar procedure was used for the five post-enrollment quarters. For the few claimants for whom we could not compute an average wage (i.e., always had missing hours worked data), we estimated an hourly wage regression equation and applied the predicted values to total wages in the quarter to impute hours worked. The predictor variables for the hourly wage imputation equation included demographic characteristics (e.g., age, age-squared, male dummy, education dummy variables, race/ethnicity dummy variables), site dummies, dummies for pre-program industry and occupation, and quarter and year dummy variables.

² Using the employer tax account number for wages reported in each quarter we were able to determine whether claimants returned to work for the same employer, and calculate how many quarters they worked for different employers.

³ Moreover, because they are only available on a quarterly basis, it is difficult to develop precise measures of earnings for the pre- and post-SEED periods. This could be a particular problem if most of the effects of the demonstration were to occur relatively early in the claim spell.

in a different state from individuals who do not work in covered employment. This is particularly problematic for claimants in the Vancouver site -- who comprise roughly one-quarter of the SEED analysis sample -- and who generally live within a few minutes of the Oregon border and the Portland metropolitan area. To the extent that treatment and control group members find jobs in Oregon, this measurement error problem would bias the net impact of the program on UI wages toward zero.

Because of the advantages of survey data for measuring earnings for all claimants (regardless of their geographical location), as well as in developing more precise measures of pre- and post-SEED wages, the main results presented below rely on the interview data described later in this chapter. However, we also present an alternative set of impact results based on outcome measures developed from UI Wage Records to determine how sensitive the results are to different measures.

Department of Revenue Data

The third major source of administrative records for the interim impact evaluation is Department of Revenue (DOR) data. For the evaluation, we obtained DOR records for individuals in the SEED Demonstration for a 10-year period, 1981-1991. This enabled us to develop several pre-program and post-program indicators of business activity. Below we describe the data obtained, their advantages and potential limitations.

To obtain the DOR data, a file of all demonstration participants -- both treatment and control group members -- was prepared by the SEED unit and sent to DOR for matching purposes. The file contained the person's name, SSN, and when known, the person's Uniform Business Identifier (UBI). The UBI is a unique identification number that is attached to the person's business license. For businesses contained in the DOR file that were matched by DOR to demonstration participants -- treatment group and control group members -- we obtained the following data:

- Date business opened and current status (e.g., whether open/closed);
- Industrial sector;
- Gross income and sales;
- State and local sales taxes paid; and

- Business and occupation taxes paid.

Because some businesses are required to pay taxes on a monthly basis, while others pay taxes on a quarterly or annual basis, we aggregated the sales and tax data into annual measures for all businesses. We also developed indicators of whether the business was "active" during a year, based on it being open during the year and having positive gross sales or income.

The availability of DOR records provide a valuable supplement to the self-employment information obtained from the follow-up interviews. Of particular importance, they enable one to estimate the impact of the demonstration on State taxes paid, which is a component of the overall benefit-cost assessment. On the other hand, as described below, there are some important limitations to the DOR data that must be recognized.

First, similar to the UI Wage Records problem described above, because the DOR data are state-based, they only include business activity in Washington State. Second, because the DOR data are a direct result of businesses paying various excise taxes on sales and income, and because individuals involved in fee-for-service businesses who receive less than \$12,000 annually do not have to pay business and occupation taxes, it is likely that some of this income is unreported. Third, because the data relate to a specific DOR business registration number, and activity from more than one business can be reported under the same tax registration number, it is not generally possible to separate the business activity of a particular individual from that of his or her spouse, parents, siblings, or friends that are also reported on the same form. This makes it difficult to link the sales and tax information to specific treatment and control group members. Moreover, to the extent that SEED participants join businesses with pre-existing tax registration numbers, it greatly limits the usefulness of other data such as business opening and closing dates and industry.⁴

A final concern about the DOR data involves the way in which the DOR records were matched to SEED participants, which could in turn result in potential differences in data quality between treatment and control groups. SEED treatment group members who started a business and received a lump-sum payment had to demonstrate they had a business license. Because the UBI associated with the license is the primary mechanism used by DOR to match businesses,

⁴ In addition, information in the DOR data base concerning the date a business closed is not likely to be very reliable since business owners may simply choose to report "no activity" on their tax forms for several periods, rather than indicate their business closed.

it is possible that the matching process was biased in favor of obtaining relatively more DOR records for treatment group members than for control group members. That is, although the DOR file contains the SSN and name of the person listed as the business owner that can also be used for matching purposes, these data are often of lower quality and could potentially result in fewer matches. However, available evidence indicates that this was not a serious problem for the evaluation.⁵

FOLLOWUP SURVEY DATA

Administering the Followup Survey

An important source of data for the impact analysis is the followup survey. The followup survey provides information about employment, unemployment and earnings in the period following random assignment. The survey also provides information about participants' opinions about the program and their perceptions of how the program did or did not help them.

Followup surveys were administered to all SEED participants and control group members approximately 1.5 to 2 years after random assignment. The average length of the followup period was 21.5 months.⁶ Further details about the length of the followup period are presented in Table 3.1. As seen in the table, half of the respondents were surveyed within 20.3 months after random assignment and 22.4 months after random assignments. Although not shown in the table, very few respondents were surveyed beyond two years after random assignment.

The surveys were conducted via telephone, from Abt Associates' Survey Research Group's telephone interviewing center in Amherst, Massachusetts. Computer Assisted Telephone Interviewing (CATI) was used to collect the survey data. This computerized interviewing system incorporates logic checks and skip pattern controls into the questionnaire. Following the conclusion of interviewing, the survey data were edited using an automated process.

⁵ First, the DOR data indicate no significant differences between treatment and control group members in any pre-program business activity measures. Moreover, based on an earlier pilot study, among individuals with known UBI, we were able to match 85 percent of the businesses based on SSN and name only. Thus, the extent of bias in these data between the two groups is likely to be small.

⁶ The survey followup period is defined as the number of months between the date of random assignment and the followup interview.

Table 3.1
Survey Followup Period
Elapsed Time Between Random Assignment and Followup Interview
(Months)

	All Survey Respondents (N = 1204)
Minimum	17.8
Lowest Quartile	20.3
Median	21.3
Third Quartile	22.4
Maximum	30.6

This first followup survey was administered between January and May, 1992. During the interview period, treatment and control group members from the SEED Demonstration were interviewed.⁷ The average time taken to complete the first followup survey was 39 minutes. A second wave of followup surveys was administered between January and April, 1993. The final report will examine the data collected from both followup surveys.

Content of the Survey Data

The survey collected detailed pre- and post-program information about employment and earnings from both wage and salary employment and self-employment. The survey also collected information on periods of unemployment, periods of time spent looking for work, questions about demographic characteristics and questions about experiences with the SEED program. Specific categories of variables that were collected on the survey are as follows:

Current and Most Recent Spells of Wage and Salary Employment

- Length of each spell
- Average number of hours worked each week
- Salary for each spell
- Industry and Occupation
- Fringe Benefits received and personal satisfaction with the job

⁷ Treatment and control group members from the Massachusetts Enterprise Project were also interviewed during the same interview period.

Other Spells of Wage and Salary Employment in the Followup Period

- Length of each additional spell of employment
- Salary for each additional spell
- Average number of hours worked each week

All Spells of Self-Employment in the Followup Period

- Industry, product, and organizational structure of the business
- Hours worked per week
- Participation of family members in ownership/operation of business
- Sources of capital used to operate the business
- Business liabilities and assets
- Earnings from the business
- Fringe benefits received
- Personal satisfaction with self-employment
- Number of family members and other individuals employed in the business

Employment Prior to Random Assignment

- Length of longest period of employment since age 18
- Type of employment for that spell (wage and salary or self-employment)
- Number of hours worked per week and salary for that employment spell

Spells of Unemployment During the Followup Period

- Number of spells of unemployment
- Length of spells

Periods of Time Spent Unemployed and Looking for Work

- Amount of time per week spent looking for work
- Type of job sought and desired salary

Background Characteristics

- Primary occupation
- Marital Status
- Household size, family income and assets

Participation in the SEED Project

- Participation in SEED activities and opinions about the quality of those activities
- Reasons for not opening a business
- Opinions about the most useful components of the program
- Receipt of additional self-employment training other than SEED

Response Rate and Characteristics of Survey Respondents

Trained interviewers in Abt Associates' Survey Research Group attempted interviews with all individuals who were randomly assigned in the SEED Project (a total of 755 treatment group members and 752 control group members). Interviews were completed with a total of 604 treatment group members and 600 control group members for an overall response rate of 80 percent.

To assess whether the group of survey respondents differed systematically from the entire group of individuals randomly assigned, in Table 3.2 we compare the two groups with respect to several demographic characteristics. As is clear from the table, the two groups are quite similar. Only slight differences are observed between the respondent sample and the total sample. Furthermore, the treatment and control samples are very similar on all characteristics.

Table 3.2
Characteristics of All
Individuals Randomly Assigned and All Survey Respondents

Characteristics ⁸	Randomly Assigned		Survey Respondents	
	Treatment (N = 755)	Control (N = 752)	Treatment (N = 604)	Control (N = 600)
Gender (%):				
Male	66.5%	68.2%	65.1%	64.8%
Female	33.5	31.8	34.9	35.1
Age				
Mean Age (in years)	39.4	39.6	39.5	39.9
Percent Age ≤ 24	4.4	3.6	3.5	3.2
Percent Age ≥ 45	27.5	28.3	27.0	29.7
Education				
Percent College Graduate	29.5	27.8	30.3	29.3
Mean Education (in years)	13.8	13.8	14.0	13.9
Prior Work Experience (%):				
Professional/technical/ managerial occupation	38.9%	35.6%	41.1%	36.3%
Clerical occupation	12.2	14.4	12.7	15.5
Manufacturing sector	22.9	24.5	23.8	24.1
Services sector	29.0	27.6	29.0	28.6
Prior Business Experience	29.3	28.4	30.1	27.6
UI Entitlement (\$):				
Mean Weekly Benefit Amount	\$196	\$198	\$199	\$199
Mean Maximum Benefit Payable	5,395	5,459	5,527	5,506

⁸ All values shown in the table are based on non-missing values. Therefore, the sample size for different variables may vary slightly.

Table 3.2 (continued)
Characteristics of All
Individuals Randomly Assigned and All Survey Respondents

Characteristics	Randomly Assigned		Survey Respondents	
	Treatment (N = 755)	Control (N = 752)	Treatment (N = 604)	Control (N = 600)
Race/Ethnicity				
Caucasian	90.6 %	92.0 %	91.9 %	95.3 %
African American	3.2	3.2	2.5	1.3
Hispanic	3.1	1.1	2.7	0.3
Other	3.2	3.7	3.0	3.0
Site				
Vancouver	20.5 %	20.4 %	20.7 %	22.0 %
Olympia	12.7	12.6	11.1	13.7
King County	37.6	37.9	38.9	36.5
Snohomish County	13.3	13.3	13.1	13.0
Wenatchee	7.7	7.9	7.5	7.3
Yakima	8.2	8.0	8.8	7.5

4

DEMONSTRATION IMPLEMENTATION AND PARTICIPANTS' PERCEPTION OF THE PROGRAM

The SEED Demonstration was implemented on a pilot basis in one site (Vancouver) in September 1989, and was then implemented in the five remaining sites beginning in February 1990.¹ Sample intake activities continued through September 1990, with business support services available to demonstration participants through March 1991. In this chapter, we provide an overview of demonstration implementation experiences.²

We first describe the flow of claimants through the demonstration intake process from the identification of targeted claimants through random assignment. This includes evidence on the comparability of the treatment and control groups, as well as the timing of intake activities. We then describe the business support services and financial assistance received by treatment group members from the SEED Demonstration. Lastly we provide information concerning participants' experiences with SEED and their assessment of program services.

DEMONSTRATION INTAKE

Development of Experimental Sample

As described in Chapter 2, the development of an appropriate experimental sample of SEED Demonstration participants involved several steps. The first step was to identify targeted

¹ Because the changes made based on the pilot study prior to full implementation were minor, the results presented in this report include data for the relatively few claimants who were part of the pilot study in Vancouver.

² Additional details concerning implementation experiences can be found in Johnson and Leonard (1991).

new claimants without immediate job prospects and invite those interested in self-employment to attend an Awareness Day meeting. A total of 42,350 invitation letters were sent to targeted claimants in the six sites during the intake period.³

In Table 4.1, we provide information on the characteristics of new UI claimants in the six demonstration sites during this period. Additionally, the characteristics of targeted claimants are compared with the characteristics of those who were excluded from the target group and not invited. These results are based on PTS data and UI wage records for a 10 percent random sample of new claimants who filed for UI benefits in the six sites during the demonstration intake period. As this table indicates, about 61 percent of all new claimants in the six sites were male, 84 percent were white, and 30 percent attended or completed college. The average age was 36 years, with about 22 percent being at least age 45 or older. The mean earnings in covered employment during the four calendar quarters prior to the quarter of filing for benefits was just under \$15,000. The mean weekly UI benefit amount (WBA) for all new claimants was \$152, with an average maximum benefits payable of \$4,000.

The results in Table 4.1 also clearly indicate that targeted claimants were quite different from non-targeted claimants, in ways that could be expected given the targeting criteria. In particular, non-targeted claimants were much more likely to be union members and on standby. For the same reasons, non-targeted claimants were much less likely to be in professional, technical, or managerial occupations or in clerical occupations. They were more likely than targeted claimants to be male, white, and slightly older, and were less likely to have any post-secondary education. In addition, non-targeted claimants had considerably higher earnings in the prior year, and correspondingly higher average weekly benefit amount and maximum benefits payable.

³ The two primary reasons that claimants were excluded from the SEED target population were: (1) employer attachment (50.3 percent of those excluded were on standby) and, (2) the claimant was a member of a full-referral union (28.9 percent). Only 18.0 percent were excluded because they had a backdated claim and very few claimants were excluded from the SEED target group because they were under age 18 or had filed an interstate claim.

Table 4.1
Characteristics of Targeted and Non-Targeted New UI Claimants

Claimant Characteristics	Targeted (Invited to AD)	Non-Targeted (Not Invited to AD)	All New Claimants
Demographics			
Percent male	56.6	79.7	61.5
Percent white	82.1	90.9	83.9
Percent high school graduate	44.3	55.5	46.7
Percent some college	21.6	19.3	21.1
Percent college graduate	10.4	3.5	8.9
Mean education (in years)	12.0	11.9	12.0
Percent age $\leq$ 24	17.6	12.6	16.6
Percent age $\geq$ 45	21.2	25.3	22.1
Mean age (in years)	35.4	36.8	35.7
Prior Work Experience			
Percent union hiring hall member	0.0	26.3	5.5
Percent on standby	0.0	54.6	11.5
Percent professional/technical/ managerial occupation	14.9	4.0	12.6
Percent clerical occupation	15.7	4.5	13.3
Percent manufacturing sector	22.4	14.6	20.8
Percent services sector	24.4	27.2	25.0
UI Wages in prior year (\$)	13,743	19,270	14,901
UI Entitlement			
Mean weekly benefit amount (\$)	144	183	152
Mean maximum benefits payable (\$)	3,737	5,003	4,002
Site			
Percent in Vancouver	24.2	39.2	27.3
Percent in Olympia	11.8	19.5	13.5
Percent in King County	26.4	20.0	25.0
Percent in Snohomish County	10.0	11.4	10.3
Percent in Wenatchee	14.1	2.8	11.7
Percent in Yakima	13.5	7.1	12.2

The second step in the intake process involved recruiting targeted claimants for the demonstration. Of the 42,350 targeted new claimants who received an invitation to attend an Awareness Day meeting, 3,167 (7.5 percent) were interested enough in the possibility of participating in the self-employment program to attend the meeting. The take-up rate differed somewhat by site, from a low of 4.6 percent in Wenatchee to a high of 9.8 percent in Snohomish. Overall, the take-up rates were lower in the rural areas of Wenatchee and Yakima. These low rates in the Wenatchee and Yakima sites relative to other sites may be indicative of a lower interest in self-employment among targeted new UI claimants in rural areas than in urban areas. Alternatively, it may reflect the much higher unemployment rates in these rural areas (described in Chapter 2) and represent claimants' assessments of the prospects for self-employment in such environments.

At the end of the Awareness Day meeting, interested claimants were provided with a SEED application packet. Of the 3,167 targeted claimants who attended the Awareness Day meeting, 1,932 (61 percent) chose to submit a SEED application.⁴ Combining the results of the first two intake steps -- Awareness Day and SEED application -- we find that 4.6 percent of all targeted claimants who received an invitation letter submitted a SEED application.

The third step in the SEED intake process was the review of SEED applications. The applications were reviewed for timeliness (they were required to be postmarked within seven days of Awareness Day) and for being substantively complete. This review process resulted in rejecting very few applicants at this stage as the applications were generally quite detailed and of high quality. Specifically, of all applications submitted, only 52 (2.7 percent) were rejected because they were submitted late and just 20 (1.0 percent) were rejected because they were not complete.

Among those with valid applications, the only remaining reason for exclusion from the random assignment pool relates to UI eligibility. In particular, the primary reason for application rejection was nonmonetary ineligibility at the time of random assignment. Specifically, at the time the random assignment program was implemented, 285 claimants who

⁴ Although we have no detailed information on the reasons for why claimants who attended Awareness Day did not submit applications, limited information from the pilot study suggests that the Awareness Day meeting and the application served a useful self-screening function. Specifically, the reasons given by a small sample of claimants who attended the meeting during the pilot study but who did not submit an application were primarily related to lack of adequate capital or concern over whether self-employment was right given their situation.

submitted applications were determined to be nonmonetarily ineligible for UI benefits. Another 55 applicants were rejected because the claim was not monetarily valid and a few others were rejected because the UI claim was canceled.

As a result of these exclusions, a total of 425 of the 1,932 SEED applications submitted were excluded from the pool for random assignment, leaving a final pool of 1,507 claimants. The random assignment pool corresponds to 47.6 percent of all individuals who attended Awareness Day and 3.6 percent of all claimants in the target group. Over the course of the demonstration, a total of 755 claimants were randomly assigned to the treatment group and 752 to the control group.

In Table 4.2, we provide information on the characteristics of the random assignment pool and the comparability of the treatment and control groups. A comparison of the targeted column with the treatment and control columns of Table 4.1 provides information on the extent to which the self-screening mechanisms incorporated into the SEED intake process generated a sample of demonstration participants that differed from the broader group of all targeted claimants. This comparison strongly indicates the self-screening steps resulted in identifying a demonstration pool of claimants that was considerably more advantaged (e.g., older, more educated, more likely to be white and in a professional occupation, more likely to have greater pre-claim earnings, more likely to have higher WBA and maximum benefits payable) than the broader group of targeted claimants.

A critical evaluation issue concerns the comparability of the individuals in the treatment and control groups. The results in Table 4.2 indicate that the random assignment process was very successful in generating two groups that were remarkably similar on all of the standard characteristics collected at the time the claim was filed. In addition, the groups are extremely similar on prior earnings and prior business experience, as well as key items obtained on the SEED application, including prior self-employment experience, marital history, family status, reason for job separation, assets, and liabilities. We conducted t-tests of differences in means on these characteristics; none of the differences was statistically significant at the .05 level.

Finally, as indicated in Table 4.2, it is interesting to note that about 8 percent of all SEED Demonstration participants owned a business at the time they applied to SEED and another 30 percent had prior experience in owning a business. The SEED application also obtained information on the type of business that individuals intended to establish. As described

Table 4.2
Characteristics of Treatment and Control Groups

Claimant Characteristics	Targeted (Invited to AD)	Treatment Group (N = 755)	Control Group (N = 752)
Demographics			
Percent male	56.6	66.5	68.2
Percent white	82.1	91.3	92.9
Percent high school graduate	44.3	31.5	31.4
Percent some college	21.6	32.6	33.2
Percent college graduate	10.4	29.5	27.8
Mean education (in years)	12.0	13.8	13.8
Percent age $\leq$ 24	17.6	4.4	3.6
Percent age $\geq$ 45	21.2	27.5	28.4
Mean age (in years)	35.4	39.4	39.6
Prior Work Experience			
Percent professional/technical/ managerial occupation	14.9	38.9	35.6
Percent clerical occupation	15.7	12.2	14.4
Percent manufacturing sector	22.4	22.9	24.5
Percent services sector	24.4	29.0	27.6
UI wages in prior year (\$)	13,743	21,996	21,345
Percent current business owner		7.1	9.3
Percent prior business experience		29.3	28.5
UI Entitlement			
Mean weekly benefit amount (\$)	144	196	198
Mean maximum benefits payable (\$)	3,737	5,395	5,459
Site			
Percent in Vancouver	24.2	20.5	20.3
Percent in Olympia	11.8	12.7	12.6
Percent in King County	26.4	37.6	37.9
Percent in Snohomish County	10.0	13.2	13.3
Percent in Wenatchee	14.1	7.7	7.8
Percent in Yakima	13.5	8.2	8.0

in detail in Johnson and Leonard (1991), the majority (53 percent) of the business ideas proposed by treatment group members in their SEED applications were in the service sector. Information from the SEED application also indicated that treatment group members on average had extensive work experience and access to quite substantial resources available to support their business development efforts if needed.⁵

Timing of Intake Activities

As described earlier, the SEED Demonstration was intended to be an early intervention program. It was anticipated that by recruiting claimants for SEED as early as possible in their claim and by providing services early, the program would serve individuals who most wanted to become self-employed (rather than those who had no other attractive option) and would be able to provide the maximum possible support to individuals during the business startup period. The program was designed to select individuals into the treatment group by the fourth or fifth week of the claim and to provide business training to treatment group members by the fifth or sixth week. Below we briefly present data that show how these timing objectives were achieved in the SEED Demonstration.

Data on the timing of intake activities through assignment to the first service -- business training modules -- are summarized overall and by site in Table 4.3. This table shows that the intake and recruitment processes occurred as planned. For example, the average length of time from the effective date of claim (EDC) until Awareness Day was 18 days, or about 2.5 weeks. About 37 percent of the treatment group members attended an Awareness Day within 12 days of their EDC and another 47 percent attended Awareness Day between 13 and 19 days after their EDC. Because a few claimants were re-scheduled for a later Awareness Day and some meetings were postponed because of holidays, a relatively small percentage (15.8 percent) did not attend a meeting until about 4 weeks after their EDC. Moreover, there were relatively small differences in timing across sites, except for Wenatchee, which tended to have a slightly longer length of time before Awareness Day.

⁵ For example, mean work experience among treatment group members was 20 years, and about 85 percent had prior work experience relevant to the proposed business, with an average of over 8 years of relevant experience. Moreover, nearly one-half owned a home, with home equity averaging over \$50,000 among homeowners; two-thirds reported they had cash resources (e.g., savings accounts, checking accounts, money market accounts, stocks, bonds) with an average value of nearly \$12,000.

Table 4.3
Timing of Intake Activities by Site
(Percent)

Activity	All Treatments (N = 755)	Site					
		Vancouver (N = 155)	Olympia (N = 94)	King County (N = 286)	Snohomish County (N = 100)	Wenatchee (N = 58)	Yakima (N = 62)
Effective Date of Claim to Awareness Day							
≤ 12 days	36.9	38.1	42.6	36.0	39.0	25.9	37.1
19 days	47.3	52.9	40.4	47.6	46.0	51.7	40.3
≥ 26 days	15.8	9.0	17.0	16.4	15.0	22.4	22.6
Mean days	17.7	17.1	17.7	17.7	17.4	19.2	18.2
Awareness Day to Random Assignment							
≤ 6 days	29.1	22.6	35.1	32.2	32.0	29.3	21.0
7-13 days	59.1	61.9	56.4	60.5	48.0	60.3	66.1
≥ 14 days	11.8	15.5	8.5	7.3	20.0	10.3	12.9
Mean days	11.1	11.9	10.4	10.7	11.7	10.6	11.8
Random Assignment to First Training Module							
≤ 7 days	53.0	51.6	43.6	52.1	50.0	67.2	66.1
8-14 days	42.4	41.3	52.1	42.3	50.0	31.0	29.0
≥ 15 days	4.6	7.1	4.3	5.6	0.0	1.8	4.9
Mean days	10.2	10.5	10.5	10.2	10.4	9.4	9.4
Mean Days from EDC to First Training Module	39.0	39.5	38.6	38.6	39.5	39.2	39.4

The time from Awareness Day to random assignment took another 11 days on average. Thus, individuals in the treatment group were randomly assigned within 29 days from their EDC on average, or within about 4 weeks in total. There was relatively little variation across sites in the time from Awareness Day to random assignment.

Finally, in the bottom panel of Table 4.3 we show the length of time from random assignment to the scheduled date of the first training module. These data indicate that over 95 percent of the treatment group members were scheduled to attend their first business training module within two weeks of random assignment, with a mean of 10 days.

Taken together, these data indicate that the average time from EDC to the date for the first training module was 39 days or about 5 and one-half weeks. Thus, it appears that the timing and frequency of key intake and service activities described in Chapter 2 occurred on schedule and helped ensure that the goal of early intervention was achieved. Moreover, the design feature of consistent frequency of activities in all sites was achieved with no differences, on average, in the timing of intake and initial service activities across sites.

SEED BUSINESS SUPPORT SERVICES

Individuals randomly assigned to the treatment group were offered a number of business support services and financial assistance. The business startup services component included intensive classroom training, assistance in preparing a business plan, individual counseling and peer support groups. The financial assistance included periodic self-employment allowance payments equal to their weekly benefit amount and a work search waiver while they were trying to start a business. Moreover, those who met all program milestones received a lump-sum payment equal to their remaining UI entitlement.

The extent to which SEED treatment group members dropped out or completed the program and the specific services received are important to understanding the results of the impact analysis. In the remainder of this chapter, we examine the extent to which treatment group members received various SEED services and describe their SEED experiences and assessment of SEED services.

Business Training Modules

Business startup assistance offered to treatment group members began with business training modules. Instructions for attending a set of four business training modules at a specific location were included in the letter sent to treatment group members informing them of their selection into SEED. As described above, the first training module was held, on average, about 10 days after random assignment. Although attendance at the first module was required -- in part to ensure that the participation agreement was signed -- it was possible for subsequent modules to be waived by the business development specialist (BDS) if the claimant could demonstrate proficiency in the topics covered in these modules. Treatment group members who did not attend the first training module were dropped from the demonstration.⁶

In Table 4.4, we provide summary information on business training module attendance and receipt of other SEED services. Of the 755 claimants in the treatment group, 640 (84.8 percent) attended the first training module. This corresponds to a 15.2 percent dropout rate from the treatment group prior to business training.⁷ Among treatment group members who attended the first business training module very few waivers were granted and nearly all attended the remaining three modules. Specifically, the attendance rate (counting the waivers as attenders) for the other three modules was 98-99 percent overall, with very little variation across sites. Taken together with the attendance rate results for the first module, 83.4 percent of all treatment group members completed the set of four training modules.⁸

⁶ All members of the original treatment and control groups, including treatment group members who dropped out of the program, were retained in the evaluation, to maintain the comparability of the treatment and control groups.

⁷ The attendance rate at the first module varied across sites from 80 percent in Wenatchee, Yakima, and Olympia to 88 percent in King County.

⁸ The overall module attendance rate ranged from 76 percent in Wenatchee to 87 percent in King County. The relatively high dropout rate for claimants in Wenatchee is consistent with the high proportion of claimants (over 50 percent) in that site who indicated on their SEED application that they expected to be called back to work by their previous employer.

Table 4.4
SEED Business Assistance Services Received
(Percent)

Business Assistance Services	All Treatment Group Members (N=755)
Business Training Modules	
Attended Module 1	84.8%
Attended (or Waived) All Modules	83.4
Business Counseling Hours	
None	29.9%
.1-.9	19.1
1-1.9	20.5
2-2.9	13.0
3-3.9	7.8
4-4.9	4.1
≥ 5	5.6
Mean Hours of Counseling	1.5
Number of Entrepreneur Club Meetings Attended	
None	64.1%
1	17.5
2	8.6
3	4.5
≥ 4	5.3
Mean Number of Meetings Attended	0.7

Business Counseling

In their role as case managers, business development specialists provided assistance to treatment group members in the form of counseling on the preparation of a business plan and on other issues. The intent was for the BDS to take a proactive role and provide individualized counseling and assistance throughout the development of the business plan and business startup. To encourage this proactive role, an objective was established for the BDSs to make at least one follow-up contact with all participants during the first few weeks after the business training modules and prior to the End of the Waiver Period Review.

The second panel of Table 4.4 contains the distribution of total business counseling hours received by SEED participants. As this table indicates, 70 percent of the treatment group received some counseling, with an overall mean of 1.5 hours.⁹ The results also indicate that very few participants received a substantial amount of counseling, with only 17.5 percent receiving 3 hours or more.¹⁰ As described in Johnson and Leonard (1991), the major focus of the individual counseling sessions was on helping treatment group members develop a business plan. Overall, nearly one-half of the counseling activities recorded were focused on business plan development assistance.

Other Business Support Services

In addition to the business training modules and individualized counseling, the SEED Demonstration included a peer support group in each site. Beginning in the second or third month of the demonstration -- after a sufficient number of new treatment group members were available -- Entrepreneur Club meetings were scheduled on a monthly basis. As indicated in the third panel of Table 4.4, the majority of treatment group members did not take advantage of this optional peer-support group. Specifically, nearly two-thirds (64.1 percent) of all treatment group members did not attend any Entrepreneur Club meetings. Moreover, the mean number of

⁹ When calculated over the 630 treatment group members who completed all four training modules, the average hours of counseling increases to about 1.8.

¹⁰ There were differences in the number of counseling hours by site. For example, about 43 percent of the treatment group members in Vancouver received at least 3 hours of counseling, as compared to none in Snohomish County, and fewer than 5 percent in Olympia or Wenatchee. Overall, it seems that there was relatively little counseling in Olympia, Wenatchee, and Snohomish County, with an average of 0.5-0.9 hours per demonstration participant.

meetings attended was 0.7. Among those participants who attended at least one meeting, the average number of meetings attended was about two.

A final type of business startup service available was referral to other agencies for assistance as needed. PTS data suggest that very little of this type of assistance occurred during the SEED Demonstration. Specifically, there were only 43 referral service records in the PTS. Moreover, 37 of these records were for the Vancouver site, and the remaining six were for claimants in King and Snohomish counties; there were no referral records for the other three sites. The low frequency of this activity is consistent with the views of some BDSs that participants did not need any assistance other than that which they were receiving from SEED.

SEED FINANCIAL ASSISTANCE

In addition to receiving their regular weekly UI benefit amount, SEED treatment group members received two other forms of financial assistance: (1) a waiver of the work search requirement while working full-time to start a business, and (2) a lump-sum payment equal to the remaining entitlement at the time all five milestones were met. In this section, we describe SEED Demonstration experiences with these financial assistance elements.

Work Search Waiver

The work search waiver enabled SEED participants to pursue their business startup plans full-time rather than actively searching for employment, as is normally required for UI recipients. The duration of the weekly benefit payments and the work search requirement waiver was initially set at 10 weeks. Several weeks before the waiver was to expire, treatment group members who had not met all milestones were sent a letter instructing them to contact their BDS for an End of Waiver Period Review to assess their progress in achieving the milestones and to determine whether the work search waiver would be extended. There were three possible results of the review: 1) extending the waiver, 2) not extending the waiver (and returning the claimant to the UI system to search for regular employment) or, 3) determining that the claimant had met all of the milestones and approving the lump-sum payment.

The most striking feature of the End of Waiver Period Reviews was the limited extent to which such reviews were conducted at all. Overall, only 93 claimants (i.e., 12.3 percent of the treatment group) were recorded as having at least one End of Waiver Period Review. Among

those for whom a review was conducted, 75 percent occurred between 9 and 12 weeks after random assignment as planned, and a large majority (77.4 percent) resulted in the waiver being extended, with very few claimants (4.3 percent) being instructed to return to regular UI.

Lump-Sum Payment

To receive a lump-sum payment, SEED participants had to achieve five milestones:

- Complete the training modules;
- Develop an acceptable business plan;
- Establish a business bank account;
- Satisfy all licensing requirements; and
- Obtain adequate financing.

In Table 4.5, we provide summary information on the receipt of lump-sum payments in the demonstration.

During the demonstration, a total of 451 treatment group members (59.7 percent) completed all milestones and received a lump-sum payment.¹¹ Approximately \$1.9 million was paid in the form of lump-sum payments, with an average payment of \$4,225.

As shown in Table 4.5, the amount of the lump-sum varied considerably among SEED participants. For example, the minimum lump-sum payment was \$561 and the maximum was \$7,380. One quarter of the recipients received a lump-sum payment of less than \$3,077, while another one quarter received more than \$5,451. As described earlier, the large differences in the lump-sum payment reflect initial differences in the maximum benefits payable and in the weekly benefit amount, as well as differences in the time required to meet the five program milestones and start a business.¹²

¹¹ The proportion of treatment group members who received a lump-sum payment ranged from a low of 47 percent in Wenatchee to a high of 65 percent in Snohomish County. The particularly low lump-sum rate in Wenatchee likely reflects the high proportion of treatment group members in the site who expected to be called back to their previous employer as described earlier.

¹² The average lump-sum payment also varied considerably across site and tended to be much higher in the urban areas of King and Snohomish County and lower in the rural sites. This difference reflects the higher UI entitlement amounts in the urban sites, as well as differences across sites in the time required to meet the five milestones.

Table 4.5 also provides information on the length of time after random assignment it took for individuals to receive their lump-sum payments. As this table indicates, 44 percent of all treatment group members who received their lump-sum payment received it within 6 weeks of random assignment (or within approximately 4.5 weeks after the business training modules). Another 17.5 percent took more than 12 weeks after random assignment to complete all of the milestones required to receive the lump-sum payment. Overall, the average length of time after random assignment until receipt of the lump-sum payment was 7.8 weeks. Since it took approximately 4 weeks on average from the effective date of claim to random assignment, this

Table 4.5
SEED Lump-Sum Payments

Lump-Sum Payments	All Lump-Sum Recipients (N = 451)
Amount of Lump-Sum Payment (\$)	
Minimum	\$561
Lowest Quartile	\$3,077
Median	\$4,360
Third Quartile	\$5,451
Maximum	\$7,380
Average	\$4,225
Time from Random Assignment to Lump-Sum Payment (percent)	
≤ 3 Weeks	8.9%
3 - 6 Weeks	35.0
6 - 9 Weeks	21.5
9 - 12 Weeks	17.1
12 - 15 Weeks	11.7
≥ 15 Weeks	5.8
Average Number of Weeks to Lump-Sum Payment	7.8

indicates that treatment group members who received a lump-sum payment did so within about 12 weeks after their effective date of claim on average.¹³

ASSESSMENT OF PROGRAM EXPERIENCES

In previous sections we used PTS and UI records to assess participants' experiences with SEED. In this section we use information from the followup survey to assess participants' perceptions of their SEED experiences. The assessment of program experience in this section focuses on participants' opinions about the quality of the program components, reasons why the program did or did not help them, and reasons why businesses were not started.

SEED treatment group members were asked a series of questions on the followup survey to determine whether or not they attended three key program activities and how they rated the quality of those activities. The three key program activities were: (1) business training modules, (2) individual counseling with business development specialists, and (3) Entrepreneur Club meetings.

Table 4.6 summarizes the opinions expressed about these program activities. Overall, 508 individuals reported attending at least one of the four training modules.¹⁴ This represents 84 percent of all treatment group respondents.¹⁵ Of those who attended at least one training module, opinions about the quality of the modules was high: 80 percent rated the modules

¹³ There were some site differences in the time taken to lump-sum payment. For example, treatment group members who received a lump-sum payment in Vancouver, King County or Wenatchee averaged nearly 9 weeks from random assignment, as compared to roughly 6 weeks in the other three sites. This suggests potential differences across sites in the types of businesses established, the needs of claimants, or the ways in which BDSs assessed the achievement of milestones. Early in the demonstration we identified a large proportion of SEED participants in Snohomish County receiving their lump-sum payment extremely early. This occurred because the BDS in that site initially treated the milestone review process as pro forma and approved many claimants for their lump-sum payment at the end of the business training modules. This situation was identified during site visits and corrected at an early follow-up training session.

¹⁴ When asked on the survey, 521 SEED participants said they had attended at least one training module. PTS records for the followup sample indicate that 522 attended at least one module. A comparison of the two data sources revealed that 508 individuals attended a workshop on both data sources. The information presented in this table is for the 508 individuals with consistent data in the two sources.

¹⁵ This reported attendance is similar to attendance levels reported earlier in this chapter for all treatment group members, based on PTS records.

excellent or good. When asked about the quality of the module instructors, the responses were even more favorable: 84 percent rated the instructors excellent or good.

Fewer survey respondents reported attending an individual counseling session. Of the 604 survey respondents in the treatment group, 268 (44.4 percent) reported that they attended at least one counseling session¹⁶. Of those who reported attending counseling sessions on the survey, nearly 84 percent said these sessions were excellent or good, while 85.5 percent said the business counselors who conducted the sessions were excellent or good.

Entrepreneur Club meetings were both the least attended and received the lowest quality ratings. Of those responding to the survey, 242 (40 percent) said they attended at least one Entrepreneur Club session.¹⁷ Of those who attended, 69.4 percent rated the sessions excellent or good.

Table 4.6
Program Experiences of SEED Participants Based on Survey Data

Business Training Modules	
Number who attended at least one module	508
Percentage who rated the modules excellent or good	80.1
Percentage who rated the module instructors excellent or good	84.1
Individual Counseling Sessions	
Number who reported attending counseling sessions	268
Percent who rated the sessions excellent or good	83.6
Percent who rated the business counselors excellent or good	85.5
Entrepreneur Club	
Number who reported attending at least one Entrepreneur Club Session	242
Percent who rated the sessions excellent or good	69.4

¹⁶ This reported attendance is substantially lower than the attendance reported earlier in Table 4.4. It should be noted, however, that the earlier results were derived from PTS data for the entire treatment group. The discrepancy between PTS data and survey data suggests that some survey respondents may not have considered a brief contact with a counselor as a counseling session, whereas such contact was reported in the PTS as a counseling session.

¹⁷ This attendance rate corresponds to the attendance rate presented earlier in Table 4.4.

The development of a business plan was one of the five milestones required in order to receive the lump-sum payment. We asked survey respondents whether or not they completed a business plan and 471 (78 percent of all respondents in the treatment group) said they did. When asked how useful they thought their business plan had been in developing their business, 82 percent said their business plan had been very or somewhat useful.

LUMP-SUM PAYMENT

As reported earlier, the PTS contains records of the number of lump-sum payments issued and the amount of the lump-sum payments. The survey provided information about how SEED participants used the lump-sum payments. Of the 604 SEED participants who responded to the followup survey, PTS records indicate that a total of 378 individuals received a lump-sum payment.¹⁸

The most commonly reported use of the lump-sum payment was for start-up business expenses. Specifically, 67 percent of those who received lump-sum payments said they used the payments for start-up business expenses. The next most common use was for personal or living expenses, with 18.5 percent reporting using their lump-sum payments in this way. Twelve percent said they used the lump-sum payment for ongoing business expenses.

DIFFICULTY OF PROGRAM ACTIVITIES

We also asked SEED participants how difficult they thought each of the five milestones was to complete. In Table 4.7, we present the proportions of the 604 treatment group survey respondents who thought the milestones were very difficult or somewhat difficult to complete.

¹⁸ Actually, among the survey respondents, 386 individuals reported receiving a lump-sum payment. However, only 378 of them had corresponding records in the PTS. Our analysis is based on the 378 who had PTS records indicating lump-sum receipt. The average lump-sum payment for this group was identical to the average reported earlier for the 451 lump-sum recipients among the entire treatment group (respondents and nonrespondents).

Table 4.7 SEED Participants' Rating of the Difficulty of Completing the Five Milestones	
Milestone	% rating the milestone very or somewhat difficult (N=604)
Attending Required Sessions	12.9
Developing a Business Plan	48.7
Setting up a Business Bank Account	6.0
Securing Necessary Licenses	11.3
Obtaining Adequate Financing	36.3

As indicated in the table, setting up a business bank account was viewed by only 6 percent of the respondents as very difficult, while developing a business plan was considered very difficult by nearly half of the treatment group (48.7 percent). Obtaining adequate financing was viewed as very or somewhat difficult by over one-third (36.6 percent) of the treatment group.

We also asked participants whether or not they completed all components of SEED. A total of 20.5 percent of all treatment group respondents said that they did not complete all activities associated with the program. The most common reason for not completing all components was personal, financial reasons (37 percent) followed by personal, non-financial reasons (27 percent).

Finally, we asked those individuals who did not start a business during the observation period whether or not they wanted to start a business. Of the 256 who did not start a business, 175 (68.4 percent) said they wanted to start a business. The main reason reported for not starting a business was financial reasons (48.7 percent of respondents gave this as the main reason).¹⁹

¹⁹ Financial reasons reported here include both personal financial concerns (12.8 percent of responses) and business financial concerns related to starting the business (35.9 percent of responses).

USEFULNESS OF PROGRAM COMPONENTS

It also important to get feedback from program participants regarding the usefulness of the various program components. To get this feedback, we asked SEED participants to rate the usefulness of several program components including the business training, waiver from UI work search, individual work with business counselors, opportunity to meet business experts, peer support and the lump-sum payment. Table 4.8 shows the opinions of the SEED participants about the usefulness of these components. Since nearly all participants reported favorable reactions to each of the program components, we present in Table 4.8 the proportions who reported that the component was very useful.

Table 4.8 SEED Participants' Rating of the Usefulness of Program Components	
Program Component	% rating the component very or somewhat useful (N = 604)
Business Training	48.7
Waiver From UI Work Search	60.9
Individual Work with Business Counselors	33.9
Opportunity to Meet Business Experts	28.3
Peer Support	25.5
Lump-Sum Payment	52.0

As the table shows, the waiver from UI work search, the lump-sum payment and the business training were regarded as the most useful program components. The peer support and the opportunity to meet business experts were rated as the least useful components of the program.

As an overall measure of participants' perceptions of the SEED program, we asked all treatment group members how they would rate the program overall, taking into consideration all aspects of SEED. A substantial majority (82 percent) of treatment group members said the SEED program was very useful or somewhat useful.

RECEIPT OF OTHER BUSINESS TRAINING SERVICES

We asked all survey respondents (treatment and control group members) whether they had received any business training other than SEED training during the followup period. The results are shown in Table 4.9. As is shown, 20.2 percent of the control group and 17.4 percent of the treatment group reported receiving such business training. In addition, 8.8 percent of control group members and 9.1 percent of treatment group members reported that they had attended business counseling sessions other than SEED sessions during the observation period. Thus, both treatment and control group members received some business training other than SEED. A test on the differences in the percentages reporting receipt of these outside services indicates no significant difference between treatment and control groups.

Table 4.9 Receipt of Business Training Services Other than SEED		
	Treatment Group (N=604)	Control Group (N=600)
Business Training Service	Percent Receiving Service	Percent Receiving Service
Any other business training or counseling	17.4%	20.2%
Any business counseling	9.1	8.8
Business counseling over the telephone	8.0	7.5
Attendance at business training seminars	12.3	12.7

CHAPTER SUMMARY

In this chapter we reviewed the implementation of the SEED Demonstration as well as participants' perception of SEED program services. The basic findings of this chapter are:

- Of the 42,350 targeted new UI claimants who received an invitation letter to attend a meeting about the SEED program, 7.5% attended.
- Claimants who submitted an application to participate in SEED tended to be older, more educated, more likely to be in professional, managerial

or technical occupations and had higher UI entitlements. In addition, many had a working spouse and substantial assets.

- The SEED recruitment and intake procedures were implemented as designed, meeting the program objective of early intervention.
- The complete intake process resulted in individuals, on average, being randomly assigned within 4 weeks from their effective date of UI claim.
- The 1,507 claimants who were randomly assigned represent 3.6 percent of the targeted UI claimants.
- Treatment group members received training services, on average, within 5.5 weeks after their effective date of claim.
- Business training services were provided consistently across all six demonstration sites.
- Approximately 60 percent of the treatment group received a lump-sum payment (equal to their remaining UI benefits) by achieving five milestones: completing the training program, developing an acceptable business plan, establishing a business bank account, satisfying all licensing requirements, and obtaining adequate financing for the proposed business.
- The average lump-sum payment was \$4,225, and among those who received it, the average length of time after random assignment until receipt of this payment was 7.8 weeks.
- Participants who attended business training modules and individual counseling sessions gave both the sessions and the instructors high ratings.
- Participants who attended Entrepreneur Club meetings gave these meetings somewhat lower ratings.
- The most common use of the lump-sum payments was for business start-up expenses.
- Among all treatment group members, developing a business plan and obtaining adequate financing were regarded as the most difficult milestones to complete. Setting up a business bank account was regarded as the least difficult milestone to complete.

- Among all treatment group members, the aspects of the program they found most useful were the waiver from the UI work search requirement, the lump-sum payment, and the business training.
- Approximately the same proportions of treatment and control group members reported receiving business training services outside of the SEED demonstration project.

PART II

IMPACTS ON EMPLOYMENT AND EARNINGS

IMPACTS ON SELF-EMPLOYMENT

In the first part of the report we described the design of the SEED Demonstration, the data sources available for the analysis and the implementation of the demonstration. With this chapter, we begin Part II, which focuses on the evaluation of program impacts on employment and earnings. Throughout the evaluation presented below, we measure program impacts by comparing the experiences of treatment group members with the experiences of control group members following random assignment.

In this chapter we concentrate on the impacts of the SEED Demonstration on the self-employment experience of demonstration participants.¹ Before beginning our presentation of program impacts, however, we review the procedures used in estimating program impacts. We then describe the characteristics of treatment group members who entered self-employment. We compare these characteristics with the characteristics of control group members who follow a similar path and estimate the impact of SEED on entry into self-employment. Next, we describe the types of self-employment enterprises operated by treatment and control group members. The start dates of these enterprises are then analyzed to determine whether the program affected the timing of self-employment spells. Following this analysis, we assess program impacts of SEED on self-employment terminations, survival rates, and longevity. We then evaluate the impact

¹ Throughout the analysis we do not distinguish between self-employment and business ownership. Inasmuch as we do not know who among the self-employed of today may become the large business owner of tomorrow, we choose not to distinguish among individuals who are self-employed and those who operate businesses that employ others. Thus, in our analysis we combine self-employment and business ownership and refer to business ownership as self-employment and vice versa.

of the demonstration on total time in self-employment and on total earnings from self-employment. Finally, we present a summary of the chapter findings.

In Chapter 6, we examine the impact of the SEED Demonstration on similar measures for wage and salary employment. In particular, we estimate program impacts on the likelihood of working in wage and salary employment, the amount of time spent in such employment and on total earnings received. Part II concludes with a discussion of the impacts of SEED on total employment and earnings outcomes in Chapter 7.

ESTIMATION OF DEMONSTRATION IMPACTS

Our measure of demonstration impacts is the difference between treatment group outcomes and what would have happened in the absence of the demonstration, as measured by the outcomes of the control group. For any given outcome, an unbiased measure of demonstration impact is provided by a simple difference in treatment and control group means. We refer to this simple difference in outcome means as the unadjusted program impact.

A more precise, and still unbiased, impact estimate can be obtained through multivariate analysis, using covariates to explain some of the variation in outcomes across the sample. By including a variable that captures treatment status (e.g., $T=1$ if the claimant is in the treatment group and $T=0$ if the claimant is in the control group), we can obtain an unbiased estimate of the average impact of the demonstration on the outcome by using ordinary least squares (OLS).² We refer to impact estimates obtained from such multivariate regression techniques as the regression-adjusted program impact.³ A standard t-test can be calculated to determine whether

² For outcomes for which the error term is not normally distributed, ordinary least squares estimates are inefficient, though still unbiased. These include dichotomous outcomes such as employment status. To obtain more efficient impact estimates for these outcomes, we use logistic regression methods for dichotomous outcomes.

³ In addition to a dummy variable for treatment status, all of the regression equations reported in this chapter included age, age-squared, unemployment rate in the claimant's county of residence during 1990, and dummies for the following variables: site variables, quarter in which the claimant's benefit year started, male, white, completed college, prior job in professional, technical or managerial occupation, prior job in services sector, whether the claimant indicated s/he intended to return to work to prior employer on the SEED application, spouse employed, having children under the age of six, having prior work experience related to proposed business, having a business at time of SEED application, having been self-employed before SEED application (but not at time of application), being a high wage earner (i.e., in the upper quartile) in the four complete quarters before filing the UI claim, and being a medium wage earner (i.e., in the two middle quartiles) in the four complete quarters before filing the UI claim.

the estimated impact is significantly different from zero. Only estimates that are significantly different from zero at the 10 percent level or better will be treated as evidence of a real effect of the demonstration.

SELF-EMPLOYMENT EXPERIENCE

As described earlier, the SEED Demonstration provided business training, counseling, and financial assistance to UI claimants who were interested enough in pursuing self-employment to apply to SEED and were randomly selected into the treatment group. A comparable group of UI claimants who were interested in pursuing self-employment were selected to serve as the control group for this experimental evaluation. Individuals assigned to the control group received regular UI services and benefits. As described in Chapter 4, 604 treatment group members and 600 control group members were surveyed approximately 21 months after random assignment. Thus, our present analysis is based on an observation period that is, on average, 21 months long.

Given the types of services provided to treatment group members (e.g., business training, counseling and financial assistance), one would expect more treatment group members than control group members to enter self-employment during the observation period. The results of Table 5.1 indicate that, indeed, treatment group members were nearly twice as likely as control group members to enter self-employment. Over one-half of the treatment group (51.9%) as compared with approximately one-quarter of the control group (26.6%) were self-employed at some point during the observation period. This 25.3 percentage point difference in the likelihood of self-employment for the two groups is statistically significant at the .01 level and corresponds to over a 90 percent effect evaluated at the mean of the control group. Thus, we can conclude that the SEED Demonstration had a positive impact on the likelihood of being self-employed at some point during the observation period.

As indicated in Table 5.1, self-employment experience was generally limited to one self-employment spell. Among the treatment group, only 19 individuals (or 6 percent of the 314 with self-employment experience) had more than one self-employment spell after random

assignment.⁴ Among the control group, only 8 individuals (or 5 percent of the 160 with self-employment experience) had multiple self-employment spells after random assignment.

Table 5.1
Self-Employment Experiences Since Random Assignment

Table 5.1 Self-Employment Experiences Since Random Assignment						
	Group				Total	
	Treatment		Control			
	N	Percent	N	Percent	N	Percent
Number of Self-Employment Spells						
1	295	48.8	52	25.3	447	37.1
2 or more	19	3.1	8	1.3	27	2.2
Subtotal - with Self-Employment	314	51.9	160	26.6	474	39.3
No Self-Employment Spells	290	48.0	440	73.3	730	60.6
Total	604	100.0	600	100.0	1204	100.0

It is interesting to compare the above results with program participants' perceptions of SEED's role in their self-employment experiences. In the followup survey, we asked treatment group members who started a business during the observation period whether or not they would have started a business if they had not participated in SEED. Of those who responded to the question, over half (55.9 percent) said they would have started a business even if they had not participated in SEED.⁵ This result is intriguing since it corresponds closely to the above finding that treatment group members were approximately twice as likely as the control group members to be self-employed during the observation period.

⁴ Each spell represents a unique self-employment enterprise. As a result, multiple self-employment spells reflect multiple enterprises rather than the same enterprise in different time periods.

⁵ Nearly two-fifths (39.0 percent), however, said they would not have started a business.

CHARACTERISTICS OF CLAIMANTS WITH SELF-EMPLOYMENT EXPERIENCE

Before presenting the multivariate regression estimate of the SEED Demonstration's impact on the likelihood of being self-employed during the observation period, we describe in this section how the likelihood of self-employment varied by sample members' characteristics. As indicated in the top panel of Table 5.2, claimants with high education levels were more likely than claimants with low education levels to be self-employed at some time during the observation period. This pattern of increasing likelihood of self-employment with education level is repeated for both treatment and control groups.

The second panel of Table 5.2 presents the likelihood of self-employment by age, where age is measured at the time of random assignment. These results indicate that, for both treatment group members and controls, the likelihood of self-employment first increases with age and then declines. Among treatment group members, we find that those in the 35 to 44 age bracket had the highest likelihood of self-employment during the observation period (56.9%). Among control group members, the highest rate of self-employment was achieved by a younger group. Specifically, approximately one-third of the controls in the 25 to 34 year old bracket were self-employed at some time during the followup period. These differences across groups by age result in somewhat larger differences between treatment and control groups in the likelihood of self-employment for those age 35 and older as compared to younger workers.

The third and fourth panels of Table 5.2 present the likelihood of self-employment by race and sex. As indicated in the third panel, minorities in both the treatment and control groups have a lower probability of self-employment than whites during the observation period. Specifically, whites in the treatment group are nearly 15 percentage points more likely than minorities to be self-employed; whites in the control group are nearly 10 percentage points more likely than minorities to be self-employed.⁶

⁶ Note, however, that the sample contains only 77 minority members (6.4% of the total sample).

Table 5.2
Likelihood of Self-Employment by Demographic Group

	Group				Total	
	Treatment		Control			
	N	Percent in Self- Employment	N	Percent in Self- Employment	N	Percent in Self- Employment
Years of Education						
Not high school graduate	24	33.3	38	21.1	62	25.8
High school graduate	198	50.0	193	21.8	391	36.1
Some college	199	51.8	193	28.5	392	40.3
College graduate	183	56.8	176	31.3	359	44.3
Total	604	52.0	600	26.7	1204	39.4
Age						
24 or younger	21	42.9	19	21.1	40	32.5
25 to 34 years old	173	48.6	178	32.0	351	40.2
35 to 44 years old	246	56.9	225	26.7	471	42.5
45 to 54 years old	128	50.8	132	23.5	260	36.9
55 or older	36	44.4	45	17.8	81	29.6
Missing			1	0.0	1	0.0
Total	604	52.0	600	26.7	1204	39.4
Race						
White	555	53.2	572	27.1	1127	39.9
Minorities	49	38.8	28	17.9	77	31.2
Total	604	52.0	600	26.7	1204	39.4
Sex						
Female	212	56.6	210	22.9	422	39.8
Male	392	49.5	390	28.7	782	39.1
Total	604	52.0	600	26.7	1204	39.4

In the bottom panel of Table 5.2, we present the results by gender. These results are particularly interesting because of the different patterns by gender among treatment and control group members. For example, within the control group, the likelihood of self-employment is higher for males (28.5%) than for females (23.2%). In contrast, within the treatment group, the likelihood of self-employment is higher for females (56.4%) than for males (49.6%). This difference suggests that there may be a differential program impact by gender on the likelihood of entering self-employment. We examine this interaction between gender and program impact in the following sections.

LIKELIHOOD OF SELF-EMPLOYMENT

In this section we present the results of OLS and logit regressions on the probability of being self-employed during the 21-month observation period. The dependent variable in these regressions is dichotomous (i.e., equal to one for those who were self-employed at some time during the observation period and zero otherwise). The covariates used in these (and subsequent) regressions are presented in Appendix A. These covariates control for demographic characteristics, education level, prior occupation, prior work experience, prior self-employment experience, prior earnings, timing of the initial UI claim, family background, and site differences. Because the results of the OLS and logit estimation techniques provide the same qualitative conclusions and are robust to the alternative model specifications, for simplicity we limit our discussion to the OLS coefficient estimates.

The regression results presented in Table 5.3 confirm our earlier conclusion that the SEED Demonstration had a significant and positive impact on the likelihood of self-employment. Indeed, the treatment coefficient (i.e., the regression-adjusted impact) indicates that, on average, the demonstration increased the likelihood of self-employment for treatment group members by 26 percentage points, or nearly 100 percent of the control group mean. Other factors that are found to significantly increase the likelihood of self-employment include prior business experience and higher levels of income (own or spouse). Specifically, the results indicate that holding other factors constant, owning a business at time of SEED application increases the likelihood of self-employment by 22 percentage points, and that having experience in the area of the proposed business increases the likelihood of self-employment by 10 percentage points. In addition, having a spouse employed increases the likelihood by 7 percentage points, and being a high or medium earner in the four quarters before filing the UI claim increases the likelihood by 16 and 8 percentage points, respectively.

The coefficient on the male dummy variable is not significantly different from zero, indicating that, other things equal, males have a similar likelihood of being self-employed as females. In the previous section, however, we noted that the program appeared to have a different impact on males than on females. To test for differential program impacts by gender, we added an interaction term (treatment status interacted with female dummy) to the basic multivariate regression reported above. The results of this regression (not reported here)

indicate that the SEED Demonstration had a significantly greater impact on females than on males in increasing the likelihood of self-employment. Specifically, the regression-adjusted impact estimate indicates that the program had an 11 percentage point greater impact on women than on men (i.e., the program impact for men was 22 percentage points; the program impact for women was 33 percentage points). Tests of other subgroup interactions (by race, site, business ownership at SEED application, prior business experience, and whether individual intended to return to prior employer) did not indicate any significant subgroup differences on the likelihood of being self-employed at some time during the followup observation period.

At this time, we can only speculate as to why the program had a greater impact on women's participation in self-employment over the observation period than on men's participation. One possible explanation is that women are more receptive to the types of services provided by the SEED program. An alternative explanation is that the program may have provided superior assistance for the types of enterprises that women were most interested in. A third explanation may be that women have a more difficult time in obtaining financing and that the SEED lump-sum payment may have helped to overcome this disadvantage. In subsequent analyses we will explore these and other explanations in an effort to determine why SEED had a greater impact on the likelihood of entering self-employment for women than for men. In the remainder of this report we investigate if SEED had a similar differential impact by gender on other key self-employment and wage and salary employment outcomes.

CHARACTERISTICS OF THE SELF-EMPLOYMENT ENTERPRISES

The results presented above indicate that the treatment group was more likely than the control group to have been self-employed during the observation period. In this section we examine the characteristics of self-employment enterprises. Specifically, we investigate the industries entered by control and treatment group members, whether the enterprises were home-

Table 5.3
Coefficient Estimates on the Likelihood of Being Self-Employed
(Standard Errors in Parentheses Beneath Coefficients)

Independent Variables	OLS Model	Logit Model
Treatment Group Dummy	26.0*** (2.7)	1.21*** (.13)
Vancouver Dummy	10.8** (5.4)	.52** (.25)
King County Dummy	7.8 (6.3)	.37 .30
Snohomish County Dummy	6.3 (6.5)	.27 .31
Wenatchee Dummy	-6.9 (7.4)	-.30 (.35)
Yakima Dummy	-2.5 (8.4)	-.07 .38
Benefit Year Started in Quarter 1 of 1990	.3 (3.7)	-.008 .17
Benefit Year Started in Quarter 2 of 1990	-4.2 (3.4)	-.15 (.16)
Benefit Year Started in Quarter 4 of 1989	-16.6** (6.8)	-.75** (.33)
Age (in years)	-.1 (1.1)	.006 (.05)
Age Squared	0 (.01)	-.0002 (.0006)
Male Dummy	-2.2 (3.0)	-.11 (.14)
White Dummy	9.9 (6.2)	.43 (.29)
Completed College Dummy	2.3 (3.3)	.14 (.15)

Table 5.3
Coefficient Estimates on the Likelihood of Being Self-Employed
(Standard Errors in Parentheses Beneath Coefficients)

Independent Variables	OLS Model	Logit Model
Prior Job in Professional, Technical or Managerial Profession Dummy	-.1 (3.2)	.005 (.15)
Prior Job in Services Sector Dummy	-1.8 (3.1)	-.15 (.14)
Intended to Return to Work to Prior Employer	-3.1 (3.8)	-.15 (.18)
Spouse Employed Dummy	7.3** (2.9)	.35*** (.13)
Children Under Age Six Dummy	-1.8 (3.5)	-.07 (.16)
Prior Work Experience in the Area of the Proposed Business Dummy	10.4*** (3.8)	.49*** (.18)
Had a Business at the Time of SEED Application Dummy	22.2*** (5.0)	1.04*** (.23)
Self-employed Prior to (but not at the time) of SEED Application Dummy	-2.0 (3.3)	-.11 (.15)
High Wage Earner in the Four Complete Quarters Before Filing the UI Claim Dummy	16.1*** (4.5)	.76*** (.21)
Medium Wage Earner in the Four Complete Quarters Before Filing the UI Claim Dummy	7.7** (3.6)	.37** (.17)
Unemployment Rate in the Claimant's County of Residence During 1990	2.1 (1.4)	.10 (.06)
Intercept	-9.8 (24.5)	-2.98** (1.16)

***Indicates coefficient is significantly different from zero at the .01 level.

**Indicates coefficient is significantly different from zero at the .05 level.

*Indicates coefficient is significantly different from zero at the .10 level.

based, what their legal structure was, what percent of the enterprise was owned by the claimant, and whether the owner invested his/her own money into the enterprise.

Not surprisingly, most enterprises operated by treatment and control group members were in the service industry category (see Table 5.4). Indeed, within both the treatment and the control groups, the number of service industry enterprises dominated all other industry categories. The predominance of service industry enterprises (which are generally smaller than other types of enterprises) may also explain why most of the enterprises were home-based. Specifically, roughly three out of every four businesses were home-based. The small size of these enterprises may also explain why the self-employed tended to organize their enterprises as sole proprietorships. Indeed, relatively few of the self-employed incorporated or established partnerships.

A substantial majority of the self-employed owned all (100%) of their enterprises. Indeed, only 5.5 percent of the treatment group and 4.2 percent of the control group shared ownership. Furthermore, most of those in self-employment invested at least some of their own money to finance their enterprise. Very few, in fact, were able to enter self-employment without investing some of their own capital.

TIMING OF SELF-EMPLOYMENT SPELLS

In this section we evaluate the impact of the SEED Demonstration on the timing of these self-employment spells. Given the design of the demonstration, one would expect treatment group members to enter self-employment more rapidly than control group members. As described in Chapter 2, treatment group members were provided a monetary incentive to start their businesses quickly. That is, the more rapidly treatment group members completed their five business milestones, the larger their lump-sum payment.⁷ Control group members did not have similar incentives to enter self-employment quickly. In fact, control group members may have been implicitly discouraged from pursuing self-employment since they were required (by UI regulations) to pursue wage and salary employment while collecting UI benefits.

⁷ On the other hand, one could argue that the required training sessions and the required milestones may have delayed self-employment entry for treatment group members relative to control group members.

Table 5.4
Characteristics of Self-Employment Enterprises
(Percent)

	Group		Total (Percent)
	Treatment (Percent)	Control (Percent)	
Industry			
Construction	3.5	3.2	3.3
Manufacturing	8.3	4.3	6.3
Wholesale/Retail	4.6	1.8	3.2
Services	18.7	10.0	14.4
Other	4.6	4.0	4.3
No Self-Employment	60.3	76.7	68.4
Whether Operated From Home			
Home-based	29.1	17.2	23.2
Not home-based	10.6	5.8	8.2
Missing	.	0.3	0.2
No self-employment	60.3	76.7	68.4
Structure of Enterprise			
Sole proprietorship	32.5	17.7	25.1
Partnership	2.2	2.0	2.1
Corporation	4.8	2.5	3.7
Missing	0.3	1.2	0.7
No self-employment	60.3	76.7	68.4
Percent of Enterprise Owned			
Own 100%	34.1	18.5	26.3
Share ownership	5.5	4.2	4.8
Missing	0.2	0.7	0.4
No self-employment	60.3	76.7	68.4
Financial Investment			
Invested own money	36.6	19.5	28.1
Did not invest own money	3.0	3.2	3.1
Missing	0.3	0.5	0.4
No self-employment	60.1	76.8	68.4

In Table 5.5 we present the results on timing of business starts for the treatment group. These results focus on claimants' first self-employment experience of the observation period; that is, on the self-employment spell with the earliest start date.⁸ One interesting result that was noted in Chapter 3, concerns the relatively high proportion of sample members who began their first self-employment spell prior to the random assignment date. In fact, many began their first self-employment spell of the observation period even before their initial UI claim date.⁹ That is, among the treatment group, 8.6 percent report having begun their first self-employment spell before the UI claim date. This is very similar to the proportion who report they owned a business on their SEED application. Another 6.3 percent report having begun their first spell between their UI claim date and their random assignment date. Taken together, this indicates that nearly 15 percent of the treatment group had a self-employment spell that began before random assignment. The results of Table 5.5 also indicate that 22.8 percent of the treatment group entered self-employment within three months after their random assignment date.

These timing issues may be clarified by examining the elapsed time from random assignment to the start of the first self-employment spell. Treatment group members who started their first enterprise **before** random assignment, on average, started the enterprise 15 months before random assignment.¹⁰ Treatment group members who started their first enterprise **after** random assignment, on average, started their first enterprise 3.8 months after random assignment.

To test whether SEED had an impact on the timing of business starts, we must compare the mean elapsed time (to the start of the first self-employment spell) for the entire control group with the mean elapsed time for the entire treatment group (i.e., not just those who entered self-

⁸ For a self-employment spell to be included in this analysis, it must overlap at least part of the observation period. Thus, a spell may start before random assignment, but it must continue past random assignment to be included in this analysis.

⁹ To mark the beginning of the UI spell we use the initial UI claim date minus 30 days (UI-30). We use UI-30 partly to overcome date recollection problems in the survey. That is, many respondents did not recall the exact start date of their business. For those who did not know the exact day, but reported a valid month and year, we used the 15th of the month as the business start date. Inasmuch as the initial UI claim date is an exact date (from UI records) and the business start date is based on respondent's inexact recollection, we use UI-30 to ensure that the business start date is indeed before the initial UI claim date.

¹⁰ The SEED Demonstration could not have affected the start date of this group.

employment). To do that, however, we must use a procedure that takes account of those claimants who did not enter self-employment during the observation period. That is, a

Table 5.5
Timing of First Self-Employment for Treatment Group

Self-Employment Started	Treatment Group	
	N	Percent
Before UI claim	52	8.6
Between UI claim and RA	38	6.3
1st month after RA	55	9.1
2nd month after RA	54	8.9
3rd month after RA	30	5.0
4th - 6th month after RA	33	5.5
7th -12th month after RA	17	2.8
13th - 24th month after RA	22	3.6
Missing dates	9	1.5
No self-employment	294	48.7
Total	604	100.0

substantial number of both treatment and control group members did not enter self-employment during the observation period. For this subgroup, we set elapsed time equal to the length of the observation period (since this group had not entered self-employment as of the end of the observation period).¹¹

As seen in Table 5.6, the mean elapsed time for the entire control group was 15.8 months. The simple difference in means between the treatment group and the control group (the unadjusted impact) is -5.9 months; the regression-adjusted impact is -6.4 months. Thus, we find

¹¹ These observations are obviously censored and, require more sophisticated econometric techniques for a complete analysis. We will explore alternative techniques for analyzing this and other censored outcome variables in subsequent analyses.

that treatment group members entered self-employment approximately six months earlier than control group members.¹²

Table 5.6
SEED Impacts on Business Self Employment Outcome Measures
Elapsed Time Between Random Assignment and Start
of First Self-Employment
(Standard Errors in Parentheses)

Outcome Measure	Control Group Mean	Unadjusted Impacts	Regression Adjusted Impacts
Mean Elapsed Time to Start of First Self- Employment	15.8	-5.9*** (1.0)	-6.4*** (1.0)
Mean Elapsed Time to Start of First Self- Employment for claimants who did <u>not</u> own a business at the time of application	17.8	-5.7*** (.6)	-5.8*** (.5)

***Indicates coefficient is significantly different from zero at the .01 level.

**Indicates coefficient is significantly different from zero at the .05 level.

*Indicates coefficient is significantly different from zero at the .10 level.

The above results, however, are affected by the substantial number of claimants who reported a self-employment start date that preceded the random assignment date. For the most part, these cases represent claimants who reported owning a business at the time of their SEED application. Since the SEED Demonstration could not have had an impact on the start date of these businesses and, since we found earlier (in Chapter 3) that the treatment and control groups were similar in their likelihood of business ownership prior to random assignment, we re-estimated the above regression excluding claimants who owned a business at application time.

The results for the remaining cases (i.e., for claimants who did not own a business at application) are reported in the second row of Table 5.6. The mean elapsed time for control members was 17.8 months; the unadjusted and adjusted impact estimates are -5.7 months and

¹² An analysis of program impacts on the timing of business startup for those who started a business after random assignment (not reported here) indicates that treatment group members started their business 5.8 months earlier than control group members (significant at .01 level). This result is similar to our finding above.

-5.8 months, respectively. Thus, excluding those who owned a business at application time does not alter the basic conclusion about program impacts on the timing of self-employment starts. That is, the SEED Demonstration expedited entry into self-employment by approximately six months.¹³

SELF-EMPLOYMENT AT TIME OF THE FOLLOWUP SURVEY

The results described above indicate that treatment group members were more likely than control group members to have a self-employment spell during the observation period, and that they were likely to start their self-employment spells earlier than control group members. Although these results confirm that the SEED Demonstration was successful in encouraging business startups, they do not necessarily indicate program success since many of the self-employment experiences may not have been successful (i.e., ended up in early terminations). A better indicator of program success may be the proportion of individuals remaining in self-employment at the time of the followup survey (i.e., approximately 21 months after random assignment).

In Table 5.7 we present information on the proportion of treatment and control group members who were self-employed at the time of the followup survey. Among the 604 treatment group members, 207 (34.3%) were self-employed at the time of the followup survey in businesses that started after the random assignment date. Among the 600 control group members, only 107 (18.2%) were self-employed at the time of the survey in businesses that started after the random assignment date. These results reinforce our findings described earlier, in that just as we found that treatment group members were nearly twice likely to experience a self-employment spell as control group members after random assignment, we now find that treatment group members are nearly twice as likely to be self-employed at the time of the followup survey.

¹³ We also investigated elapsed time to the start of current self-employment spell. The qualitative conclusions from that analysis were similar to the results reported above for first self-employment spell.

Table 5.7
Self-Employment at Followup Survey

	Group				Total	
	Treatment		Control			
	N	Percent	N	Percent	N	Percent
Not Self-Employed at Survey	397	65.7	493	82.2	890	73.9
Self-Employed at Survey	207	34.3	107	17.8	314	26.1
Total	604	100.0	600	100.0	1204	100.0

A statistical test of the difference between groups in the likelihood of self-employment at the time of the followup survey indicates that the program had a statistically significant impact. Specifically, SEED increased the likelihood of self-employment at the time of the followup survey by 16.1 percentage points (unadjusted impact) or, 89% of the control group mean. The regression-adjusted impact (not reported here) was 16.0 percentage points.

We also investigated whether there were differences by gender in the impact of SEED on being self-employed at the time of the followup survey. These results (not reported here) indicated no significant difference in SEED impact between men and women on being self-employed at the time of the survey. This result differs from our earlier finding of a gender interaction effect on the likelihood of self-employment at some point during the observation period. Thus, while the program had a greater impact on the likelihood of women entering self-employment than it did for men, there is no evidence of a differential impact by gender on the likelihood of being self-employed at the end of the observation period. This result suggests that the rate of self-employment terminations is higher among women than men.

SELF-EMPLOYMENT TERMINATIONS AND SURVIVAL RATES

Inasmuch as the above results indicate that treatment group members overall were approximately twice as likely as control group members overall to start self-employment and approximately twice as likely to be self-employed at the time of the followup survey, one would expect the rate of self-employment terminations (among those who were self-employed) to be

approximately equal for both groups. Indeed, the results in Table 5.8 indicate that the rates of self-employment terminations in the first year of self-employment¹⁴ are quite similar for the two groups: 37.1 percent for the treatment group and 33.5 percent for the control group (see bottom row of table).¹⁵ An interesting pattern emerges, however, when we examine the termination rates by the timing of the first self-employment start date relative to the date of random assignment. In particular, the rate of terminations within the first year of self-employment is highest (over 50 percent) for those who started their first self-employment spell within one month after random assignment (among both treatment and control group members). For those who take longer to start their first enterprise, the termination rate declines precipitously. This suggests that starting self-employment immediately after becoming unemployed may not be conducive to remaining self-employed.

Although there appears to be no overall difference in the termination rates of treatment and control group members (i.e., slightly over one-third of both groups terminated a business during the first year of operation), there may be an indirect impact of the program on self-employment terminations. That is, we observed earlier that the SEED program accelerated the self-employment start dates of some treatment group members. Moreover, in this section we observe that terminations were highest among self-employment spells that started within one month of random assignment. These two observations combined, raise the following question: Did the SEED program lead to higher termination rates among claimants who started their self-employment early?

¹⁴ In this analysis we examine the termination rate during the first year of self-employment rather than the termination rate for the entire observation period. We do this to account for the truncation of the observation period. That is, since our analysis is based on a fixed observation period, and since treatment group members started their self-employment spell earlier than control group members, there is a greater opportunity to observe terminations among the treatment group. To compensate for this, we only consider terminations that occurred among those self-employment spells that began more than one year from the end of the observation period.

¹⁵ Inasmuch as the demonstration had an impact on the selection of treatment group members into self-employment (as described earlier), simple differences in the experiences of treatment and control group members who had a self-employment spell do not reflect program impacts. Only if there is no "selection bias" will the results of simple comparisons be valid measures of program impacts.

Table 5.8
Percent of Self-Employment Spells Terminated
By First Self-Employment Spell Start Date
(Among Those With Self-Employment)

First Self-Employment Spell Start Date	Group				Total	
	Treatment		Control			
	N	Percent Terminated	N	Percent Terminated	N	Percent Terminated
Before UI claim	52	30.8	35	31.4	87	31.0
Between UI and RA	38	42.1	17	41.2	55	41.8
1st month after RA	55	52.7	12	58.3	67	53.7
2nd month after RA	54	38.9	7	42.9	61	39.3
3rd month after RA	30	20.0	4	25.0	34	20.6
4th - 6th month after RA	33	33.3	12	16.7	45	28.9
7th - 12th month after RA	17	35.3	24	29.2	41	31.7
13th - 24th month after RA	22	13.6	43	25.6	65	21.5
Missing dates	9	77.8	4	100.0	13	84.6
Total	310	37.1	158	33.5	468	35.9

To address this question we examine the impact of the interaction between treatment status and early entry into self-employment on the likelihood of self-employment termination.¹⁶ In the first row of Table 5.9 we present the percentage of the control group who experienced a self-employment termination during the observation period. Among control group members who had a self-employment spell during the observation period, 34.4 percent terminated their first self-employment spell within one year of its start date. As seen in Table 5.9, the unadjusted and adjusted impacts are positive but not statistically significant, indicating that treatment group members had a similar overall termination rate as control group members. However, when we

¹⁶ This analysis is restricted to those claimants who were self-employed at some point during the observation period. This approach does not take into account self-selection into self-employment. That is, treatment group members who enter self-employment may differ from control group members who enter self-employment. In future analyses we will explore alternative econometric techniques to account for self-selection in the analysis of termination rates.

add an interaction term (not reported here) to capture the interaction between treatment status and early self-employment entry (i.e., entry within one month after random assignment), we find that treatment group members who entered self-employment early were significantly more likely to terminate their self-employment spell than control group members who entered self-employment during the same period. Thus, while there is no overall program impact on terminations, there appears to be a differential impact on terminations based on when the self-employment spell started.¹⁷

The above results raise another question concerning self-employment terminations. Specifically, did some treatment group members take improper advantage of the financial incentives in the SEED program by starting self-employment soon after random assignment and quickly terminating the enterprise, thereby retaining their lump-sum payment for other purposes? To investigate this issue, we examined whether treatment group members had a greater propensity (than control group members) to quickly terminate a self-employment enterprise. In the second panel of Table 5.9 we present the proportion of the control group who terminated their first self-employment spell within 100 days of its start date (we refer to these as quick terminations). Among those in the control group who had a self-employment spell, the rate of quick terminations was 3.8 percent. The simple difference between the control group and the treatment group (unadjusted impact) is 0.5 percentage points and the regression-adjusted impact is 0.4 percentage points (both not statistically significantly different from zero). Moreover, when we interacted treatment status with early entry into self-employment, we found no differential impact on the likelihood of terminating within 100 days based on when the self-employment spell started. We also found no differential program impact by gender. Thus, these results provide no evidence to indicate that treatment group members took advantage of the availability of the lump-sum payment to start a business and then terminate it quickly. Additional evidence on this issue is provided in Chapter 8.

¹⁷ We also found (not reported here) an interaction effect by gender. That is, males in the treatment group were less likely to terminate their self-employment spell (within one year) than females in the treatment group.

Table 5.9
SEED Impacts on Self Employment Outcome Measures
Likelihood of Self-Employment Termination
(Standard Errors in Parentheses)

Outcome Measure	Control Group Mean	Unadjusted Impacts	Regression Adjusted Impacts
Likelihood of Terminating Self-Employment Among Those Who Started Self-employment	34.4	3.1 (4.7)	4.9 (4.8)
Likelihood of Terminating Self-Employment Within 100 days Among Those Who Started Self-employment	3.8	.5 (2.0)	.4 (2.0)

***Indicates coefficient is significantly different from zero at the .01 level.

**Indicates coefficient is significantly different from zero at the .05 level.

*Indicates coefficient is significantly different from zero at the .10 level.

SELF-EMPLOYMENT LONGEVITY

Another dimension of the self-employment experience is the time spent in self-employment. Comparing self-employment longevity for treatment and control group members, however, presents statistical problems since treatment group members generally started their self-employment experience earlier than control group members. That is, since treatment group members started their self-employment earlier, they are likely to exhibit greater longevity during a fixed observation period.

To reduce the effect of truncation caused by the fixed 21-month observation period, we analyze below the likelihood of remaining self-employed for at least one year after the start date of the spell¹⁸. The results (presented in Table 5.10) indicate that 14.6 percent of the entire

¹⁸ This analysis is based on the following dichotomous dependent variable: 1 for those who started their first self-employment spell more than one-year before the followup survey and who remained in self-employment for at least one year and zero otherwise.

Note that this analysis was estimated for the entire sample of treatment and control group members, whereas the self-employment termination analysis presented earlier was conducted for the subset of claimants who were self-employed.

control group started a self-employment spell at least one year before the followup survey date and remained self-employed for at least one year. The unadjusted impact is 20.5 percentage points and the regression-adjusted impact is 20.8 percentage points (both significant at the .01 level), indicating that treatment group members were significantly more likely than control group members to remain self-employed for at least one year. We found no gender interaction effect on the likelihood of remaining self-employed for at least one year after the start date of the spell.

Table 5.10
SEED Impacts on Self Employment Outcome Measures
Likelihood of Remaining Self-Employed for at least One Year
After Random Assignment
 (Standard Errors in Parentheses)

Outcome Measure	Control Group Mean	Unadjusted Impacts	Regression Adjusted Impacts
Likelihood of Remaining Self-Employed at least One Year After Random Assignment	14.6	20.5*** (2.5)	20.8*** (2.4)

***Indicates coefficient is significantly different from zero at the .01 level.

**Indicates coefficient is significantly different from zero at the .05 level.

*Indicates coefficient is significantly different from zero at the .10 level.

TOTAL TIME IN SELF-EMPLOYMENT

Above we examined the likelihood of being self-employed at some point during the observation period, the likelihood of self-employment at the time of the followup survey, elapsed time to entry into self-employment, survival rates, and longevity in self-employment. In this section all these concepts are consolidated into a single variable -- total time in self-employment during the observation period.

As shown in the first panel of Table 5.11, for the entire control group, the average time in self-employment over the entire observation period was 1.9 months. For the treatment group, the total time in self-employment was 5.8 months. As shown in the second and third columns of Table 5.11, the unadjusted program impact on total time in self-employment is 3.9 months, while the regression-adjusted impact is 4.0 months (both significant at the .01 level). Thus, we

conclude that the SEED program increased time spent in self-employment by approximately four months.

Table 5.11
SEED Impacts on Self-Employment Outcome Measures
Total Time, Total Earnings, and Average Monthly Earnings from Self-Employment
(Standard Errors in Parentheses)

Outcome Measure	Control Group Mean	Unadjusted Impacts	Regression Adjusted Impacts
Total Months in Self-Employment	1.9	3.9*** (.4)	4.0*** (.4)
Total Earnings from Self-Employment (\$)	1,278.4	3,129.6** (1,259.4)	2,969.1** (1,275.3)
Average Monthly Earnings from Self-Employment (\$)	101.0	150.2** (64.7)	142.2** (65.5)

***Indicates coefficient is significantly different from zero at the .01 level.

**Indicates coefficient is significantly different from zero at the .05 level.

*Indicates coefficient is significantly different from zero at the .10 level.

An examination of interaction effects (not reported here) indicates that the SEED program had an even greater effect on treatment group members who owned a business at the time of application than on those who did not. Specifically, the regression-adjusted impact estimates indicate that SEED increased, by 7.6 months, the total time in self-employment for those who owned a business at the time of application. For those who did not own a business at application, SEED's impact was to increase total time in self employment by 3.6 months. We also investigated whether the impact of SEED on time in self-employment differed by other characteristics including gender, site, race, and prior earnings and did not find any other significant interaction effects.

SELF-EMPLOYMENT EARNINGS

Measuring earnings for the self-employed is extremely difficult for a number of reasons. First, many new entrants into self-employment do not receive regular income payments from their enterprise. As a result, they may report zero earnings when, in fact, they have positive but irregular earnings. Furthermore, some self-employed individuals underreport their earnings to federal and state authorities (e.g., to illegally reduce their tax liability). These same individuals are likely to underreport earnings in the survey. Still others may not yet have received any earnings from their enterprise (e.g., a contractor who will get paid when a construction job is complete) and, thus, report zero earnings in the survey. For all these reasons, collecting accurate self-employment earnings data is extremely difficult.

The results from our survey revealed a number of additional problem in collecting self-employment earnings information. For example, some individuals who were self-employed during the observation period could not recollect their self-employment start or end dates, or provided erroneous dates for their self-employment spells. Since, for each individual, we computed total self-employment earnings by first estimating the earnings of each self-employment spell and then summing across all spells, accurate start and end dates for each spell are crucial.¹⁹

Given the importance of accurate start and end for the construction of earnings measures, we did not include cases where "date problems" were encountered. For example, cases where the start date followed the end date, or cases where the start or end date followed the survey date, or cases where the start date preceded the random assignment date were not included in our analysis. The decision to exclude these cases rather than impute self-employment earnings for these cases was carefully considered. It was felt that imputing earnings for these cases would exaggerate program impacts. Instead, we opted for the conservative approach and did not include these cases in our analysis. For the final report, we will review this decision and assess its implications.

¹⁹ For our analysis, self-employment spells are defined as periods of self-employment that fall completely within the observation period. That is, the start and end dates must fall within the random assignment date and the date of the followup survey.

Using earning measures constructed as described above, we now present SEED's impacts on self-employment earnings. As shown in the second panel of Table 5.11, for the entire control group, total self-employment earnings over the 21-month observation period averaged \$1,278. Total self-employment earnings for the treatment group averaged \$4,408. The unadjusted impact of \$3,130 and the regression-adjusted impact of \$2,969 are both significant at the .05 level. Thus, we conclude that treatment group members earned significantly more than control group members from self-employment over the 21-month observation period.²⁰

This finding that treatment group members earned more from self-employment than control group members, in combination with the earlier result that treatment group members spent more time in self-employment than control group members, raises the question as to impacts on average earnings per time worked. In the third panel of Table 5.11, we see that the entire control group on average earned \$101 per month from self-employment. The unadjusted impact of \$150 and the regression-adjusted impact of \$142 are both significant (at .05 level). Thus, SEED had a positive impact on monthly self-employment earnings. An analysis of interaction effects did not reveal any significant interactions (with prior business ownership, gender, site, race, and prior earnings).

CHAPTER SUMMARY

In this chapter we compared the self-employment experiences of treatment and control group members in the SEED Demonstration. The main findings of this chapter are:

- SEED nearly doubled the likelihood of being self-employed at some point during the 21-month observation period.
- SEED had a greater positive impact on females than on males in raising the likelihood of self-employment at during the observation period.

²⁰ This analysis included one case (treatment group member) who reported earning more than \$500,000 over the 21-month observation period. The decision to include the case was made in part because the DOR data were unable to convincingly demonstrate that the survey data were incorrect. Moreover, when we examined the impact of excluding this single case on our results, we found that the program impact on total earnings was reduced by approximately \$1000 (i.e., from approximately \$3000 to approximately \$2000), but did not affect the qualitative conclusions about SEED program impacts.

- SEED accelerated entry into self-employment by approximately six months.
- SEED almost doubled the likelihood of being self-employed at the time of the followup survey.
- The rates of terminating self-employment spells were similar for treatment and control group members.
- SEED increased the total time in self-employment by approximately four months over the observation period.
- SEED increased total earnings from self-employment by approximately \$3000 over the observation period, and increased average monthly earnings from self-employment by approximately \$150.

In conclusion, the results indicate that the SEED Demonstration dramatically increased the likelihood of being self-employed and accelerated the timing of entry into self-employment. This indicates that a self-employment program, like SEED, is effective in promoting the rapid reemployment of claimants into self-employment. Because the survival rates of the businesses established are similar between the two groups, SEED may not provide claimants with the skills necessary to improve the longevity in self-employment.

IMPACTS ON WAGE AND SALARY EMPLOYMENT

The results of the previous chapter indicate that the SEED Demonstration had significant positive impacts on the self-employment experiences of program participants. In this chapter, we continue our focus on employment and earnings impacts, but shift our attention to examine the impacts of the demonstration on the wage and salary employment experiences of program participants. Before presenting our results, however, we first briefly discuss why the demonstration might be expected to influence wage and salary outcomes.

One might argue that there should be no impact on wage and salary outcomes since the SEED Demonstration was designed to enhance claimants' self-employment outcomes, not their wage and salary outcomes. However, wage and salary outcomes could be affected for a number of reasons. For example, suppose that the demonstration assisted the more capable treatment group members in pursuing self-employment; less capable treatment group members would likely remain unemployed or be employed in wage and salary jobs. In this instance, a comparison of the wage and salary earnings of treatment and control group members would yield a negative program impact.

Similarly if the demonstration delayed entry into wage and salary employment for some treatment group members, their wage and salary earnings would likely be lower than they otherwise would have been. For example, if some treatment group members participated in the business training and began developing a business plan for several weeks before recognizing that self-employment was not for them, they are likely to have postponed their search for wage and salary employment during this interval. Since control group members were not similarly distracted from their search for wage and salary employment by an offer of business training and financial assistance, they were not delayed in their search for wage and salary employment. A

comparison of wage and salary earnings of all treatment and control group members would also yield a negative program impact for this reason.

On the other hand, if the demonstration services (e.g., business counseling, peer group meetings) provided treatment group members with increased awareness of their marketable skills and enhanced their self-confidence and employability, SEED could have a positive effect on wage and salary earnings. Thus, even though SEED was designed to enhance the self-employment outcomes of program participants, it is likely to have significant effects on the wage and salary experiences of its participants. It is important to examine these effects on wage and salary outcomes to get a sense of the total impact of the program on employment and earnings outcomes.

In this chapter, we first describe the number of wage and salary job spells held by treatment and control group members during the observation period. We then describe the characteristics of those treatment and control group members who were employed in a wage and salary job during the observation period. Following this description, we present a multivariate regression analysis of the impact of SEED on the likelihood of having a wage and salary job during the observation period. Next, we evaluate the impact of SEED on the timing of the first wage and salary job during the observation period. SEED's impact on the likelihood of having a job at the time of the followup survey is then assessed. Total time in wage and salary employment and total earnings from this employment are then analyzed. Finally, we present a summary of SEED impacts on wage and salary employment experiences.

WAGE AND SALARY EMPLOYMENT EXPERIENCES

In Table 6.1 we examine the number of different spells of wage and salary employment for both treatment and control groups during the observation period. Not surprisingly, a smaller proportion of the treatment group than the control group had at least one wage and salary job during the observation period (70.0% versus 75.3%). A test of the difference between these two proportions indicates that SEED had a statistically significant impact (at the .05 level) on the likelihood of a wage and salary job during the observation period. It is interesting to note that the bulk of the difference between the treatment and control group on this measure arises from the differences in the number of individuals with multiple wage and salary spells. Specifically,

among the control group, 26.6 percent had two or more wage and salary spells; among the treatment group, only 22.6 percent had multiple spells.

Table 6.1
Wage and Salary Experiences Since Random Assignment

Table 6.1 Wage and Salary Experiences Since Random Assignment						
	Group				Total	
	Treatment		Control			
	N	Percent	N	Percent	N	Percent
Number of Job Spells						
1	286	47.4	292	48.7	578	48.0
2 or more spells	137	22.6	160	26.6	297	24.7
Subtotal - with Job Spells	423	70.0	452	75.3	875	72.7
No Job Spells	181	30.0	148	24.7	239	27.3
Total	604	100.0	600	100.0	1204	100.0

Before presenting our multivariate regression estimates of SEED's impact on the likelihood of a wage and salary job during the observation period, we first provide descriptive data on how the likelihood of having a wage and salary job varied by sample members' characteristics. As indicated in the top panel of Table 6.2, among individuals in the treatment group with at least a high school diploma, the likelihood of entering wage and salary employment is approximately 69 percent and does not vary by level of education. Similarly, among controls with at least a high school diploma, the likelihood of entering wage and salary employment is also quite invariant by education level (approximately 75 percent). The exception to this pattern is for claimants without a high school diploma. Specifically, as indicated in the top panel of Table 6.2, claimants in the treatment group without a high school diploma are much more likely to obtain a wage and salary job during the observation period (87.5 percent) than those in the control group (71.1 percent).¹

¹ Note, however, that only approximately 5% of the total sample (62 out of 1204) were non-high school graduates.

Table 6.2
Likelihood of Wage and Salary Employment by Demographic Group

	Treatment				Total	
	Treatment		Control			
	N	Percent	N	Percent	N	Percent
Years of Education						
Not high school grad	24	87.5	38	71.1	62	77.4
High school graduate	198	69.2	193	75.6	391	72.4
Some college	199	69.3	193	76.7	392	73.0
College graduate	183	69.4	176	74.4	359	71.9
Total	604	70.0	600	75.3	1204	72.7
Age						
24 or younger	21	71.4	19	73.7	40	72.5
25 to 34 years old	173	76.9	178	77.0	351	76.9
35 to 44 years old	246	66.7	225	76.9	471	71.5
45 to 54 years old	129	68.0	132	73.5	160	70.8
55 or older	36	66.7	45	68.9	81	67.9
Missing	0	0.0	1	0.0	1	0.0
Total	604	70.0	600	75.3	1204	72.7
Race						
White	555	70.8	572	75.3	1127	73.1
Minority	49	61.2	28	75.0	77	66.2
Total	604	70.0	600	75.3	1204	72.7
Sex						
Female	212	74.1	210	79.5	422	76.8
Male	392	67.9	390	73.1	782	70.5
Total	604	70.0	600	75.3	1204	72.7

The remaining panels of Table 6.2 show the likelihood of wage and salary employment during the observation period for treatment and control groups by claimants' age, race, and gender. For the most part, these results are reasonably consistent across treatment and control groups and suggest that program impacts are not likely to vary much across most subgroups. There are, however, a few subgroup differences in the likelihood of wage and salary employment worth noting. In addition to the difference by education level described above, there appear to be differences by age and race/ethnicity. For example, there are large differences between treatment and control group members in the likelihood of wage and salary employment for claimants aged 35 to 44 years old, and relatively small differences for most other age groups. As described in Chapter 5, treatment group members aged 35 to 44 were most likely to have a self-employment spell. Moreover, minorities in the treatment group were less likely than whites to have a wage and salary job. Within the control group, however, minorities and whites were about equal in their likelihood of having a wage and salary job. In the following section we examine through multivariate regression techniques whether these subgroup differences in the likelihood of wage and salary jobs during the observation period are statistically significant.

LIKELIHOOD OF WAGE AND SALARY EMPLOYMENT

In this section we present the results of a multivariate regression on the probability of having a wage and salary job during the 21-month observation period. The dependent variable in these regressions is dichotomous (i.e., equal to one for those who had a wage and salary job at some time during the observation period and zero otherwise). The covariates used in these regressions are the same as those employed in Chapter 5 (see Appendix A for details).

The regression results presented in Table 6.3 confirm our earlier conclusion that the SEED Demonstration had a significant and negative impact on the likelihood of having a wage and salary job during the observation period. Indeed, the coefficient of the treatment dummy (i.e., the regression-adjusted impact) indicates that, on average, the demonstration decreased the likelihood of a wage and salary job for treatment group members by 5.6 percentage points. Holding other variables constant, other factors that have a statistically significant impact on the likelihood of having a wage and salary job (for *both* the treatment and control groups) are

Table 6.3
Coefficient Estimates on the Likelihood of Wage and Salary Employment
 (Standard Errors in Parentheses Beneath Coefficients)

Independent Variables	OLS Model	Logit Model
Treatment Group Dummy	-5.6* (2.6)	-.31** .13
Vancouver Dummy	-.8 (5.1)	-.08 (.25)
King County Dummy	3.8 (6.0)	.17 (.30)
Snohomish County Dummy	4.1 (6.2)	.23 (.31)
Wenatchee Dummy	10.7 (7.1)	.55 (.37)
Yakima Dummy	10.1 (7.9)	.48 (.40)
Benefit Year Started in Quarter 1 of 1990	1.4 (3.5)	.07 (.18)
Benefit Year Started in Quarter 2 of 1990	1.6 (3.3)	.07 (.17)
Benefit Year Started in Quarter 4 of 1989	14.5** (6.5)	.64* (.35)
Age (in years)	0.5 (1.0)	.01 (.05)
Age Squared	0 (.01)	-.00 (.00)
Male Dummy	-4.4 (2.9)	-.25* (.15)
White Dummy	6.6 (5.9)	.50* (.28)
Completed College Dummy	1.0 (3.2)	.06 (.16)
Prior Job in Professional, Technical or Managerial Occupation Dummy	1.4 (3.1)	.09 .16

Table 6.3
Coefficient Estimates on the Likelihood of Wage and Salary Employment
(Standard Errors in Parentheses Beneath Coefficients)

Independent Variables	OLS Model	Logit Model
Prior Job in Services Sector Dummy	-2.6 (2.9)	-.11 (.15)
Intended to Return to Work to Prior Employer Dummy	.6 (3.6)	.06 (.19)
Spouse Employed Dummy	-5.8** (2.7)	-.33** (.14)
Children Under Age Six Dummy	-3.0 (3.3)	-.17 (.17)
Prior Work Experience in the Area of the Proposed Business Dummy	-3.7 (3.6)	-.17 .19
Had a Business at the Time of SEED Application Dummy	-15.4*** (4.7)	-.73*** (.23)
Had Been Self-employed Prior to (but not at the time) of SEED Application	-6.0* (3.1)	-.31** (.16)
High Wage Earner in the Four Complete Quarters Before Filing UI Claim	-4.9 (4.2)	-.25 (.21)
Medium Wage Earner in the Four Complete Quarters Before Filing UI Claim	4.7 (3.4)	.25 (.17)
Unemployment Rate in the Claimant's County of Residence During 1990	-.6 (1.3)	-.03 (.07)
Intercept	73.0 (23.2)	1.24 (1.20)

***Indicates coefficient is significantly different from zero at the .01 level.

**Indicates coefficient is significantly different from zero at the .05 level.

*Indicates coefficient is significantly different from zero at the .10 level.

whether the spouse is employed and business ownership/experience. Specifically, these results indicate that having a spouse who is employed decreases the likelihood of a claimant having a wage and salary job during the observation period by 6 percentage points, owning a business at the time of SEED application reduces the likelihood by 15 percentage points, and having prior self-employment experience (but not self-employed at application) decreases the likelihood of wage and salary employment during the observation period by 6 percentage points. These results are quite consistent with the positive effects of each factor on the likelihood of self-employed described in Chapter 5. An investigation of potential interaction effects (i.e., interaction of treatment status with various independent variables) revealed no significant differences.

TIMING OF FIRST WAGE AND SALARY JOB SPELL

In this section we evaluate the impact of the SEED Demonstration on the timing of the first wage and salary job spell of the observation period. Given the findings presented earlier concerning the impact of SEED in accelerating entry into self-employment, combined with its effects in reducing the likelihood of working in wage and salary employment, one would expect SEED to have delayed treatment group members' pursuit of wage and salary employment. Hence, one would also expect treatment group members, on average, to start their first wage and salary job after the control group. Indeed, if SEED were highly successful, many treatment group members would succeed in self-employment and never return to wage and salary employment.

In Table 6.4 we present the timing of wage and salary job starts for the treatment and control groups. These results focus on claimants' first wage and salary job experience of the observation period; that is, on the job spell with the earliest start date.² The results of Table 6.4 indicate very similar distributions of first wage and salary job start dates for both treatment and control groups. Indeed, the mean elapsed time from random assignment to the start of the first wage and salary job was 3.9 months for both the treatment and the control groups (not

² For a wage and salary job spell to be included in this analysis, it must overlap, at least, part of the observation period. Thus, a spell may start before random assignment, but it must continue past random assignment to be included in this analysis.

reported in table). Thus, among those who had a wage and salary job, there is appears to be no difference, on average, in the timing of the first wage and salary job start.

Table 6.4
Timing of First Wage and Salary Job

Table 6.4 Timing of First Wage and Salary Job						
Wage and Salary Job Started:	Group				Total	
	Treatment		Control			
	N	Percent	N	Percent	N	Percent
Before UI claim	64	10.6	65	10.8	129	10.7
Between UI claim and RA	9	1.5	21	3.5	30	2.5
1st month after RA	23	3.8	38	6.3	61	5.1
2 months after RA	22	3.6	32	5.3	54	4.5
3 months after RA	26	4.3	23	3.8	49	4.1
4th - 6th month after RA	71	11.8	78	13.0	149	12.4
7th - 12 month after RA	102	16.9	93	15.5	195	16.2
13th - 24th month after RA	77	12.8	78	12.9	155	12.9
Missing dates	28	4.6	26	4.3	54	4.5
No Wage and Salary Employment	181	30.0	147	24.5	328	--27.2
Total	604	100.0	600	100.0	1204	100.0

To formally test whether SEED had an impact on the timing of job starts, we must compare the mean elapsed time to the start of the first wage and salary job spell for the entire control group with the mean elapsed time for the entire treatment group (i.e., not just those who had a wage and salary job). Before we evaluate program impacts of SEED on elapsed time to first wage and salary job, however, we must account for those claimants who did not find a wage and salary job during the observation period. For those who did not find a wage and salary job during the observation period, we employ a procedure similar to one used in Chapter

5 when examining time to the start of the first self-employment spell. Specifically, for those who do not find a wage and salary job, we set elapsed time to the start of the first job equal to the length of the observation period (since this group had not found a job as of the end of the observation period).³

As indicated in Table 6.5, using this approach results in a mean elapsed time until first wage and salary job for the entire control group of 9.6 months. The simple difference in means between the treatment group and the control group (the unadjusted impact) is 0.9 months (significant at the .10 level); the regression-adjusted impact is 1.1 months (significant at the .05 level). Thus, we find that the SEED Demonstration delayed the start of the first wage and salary job spell by approximately one month.

Table 6.5 SEED Impacts on Wage and Salary Outcome Measures (Standard Errors in Parentheses)			
Outcome Measure	Control Group Mean	Unadjusted Impacts	Regression Adjusted Impacts
Elapsed time to beginning of first wage and salary spell (Months)	9.6	0.9* (0.5)	1.1** (0.5)
Likelihood of wage and salary employment at followup survey	54.7	-4.0 (2.9)	-4.8 (2.9)
Number of months in wage and salary employment	8.5	-1.1** (.5)	-1.0** (.5)
Total wage and salary earnings during observation period (\$)	17,221	-2,209 (1,470)	-2,518* (1,441)
Average monthly wage and salary earnings during the observation period (\$)	1,321	-109 (94.4)	-132 (92)

***Indicates coefficient is significantly different from zero at the .01 level.

**Indicates coefficient is significantly different from zero at the .05 level.

*Indicates coefficient is significantly different from zero at the .10 level

³ These observations are obviously censored and require more sophisticated econometric techniques for a complete analysis. We will explore alternative techniques for analyzing this and other censored outcome variables in subsequent analyses.

An analysis of subgroup interactions (not reported here) revealed one significant interaction effect. In particular, we found that the SEED Demonstration accelerated the start of the first wage and salary job for those treatment group members who owned a business at the time of SEED application.⁴ For those who did not own a business at the time of application, the impact was to delay the start of the first wage and salary job. This result is somewhat puzzling and will be investigated further in subsequent analyses.

WAGE AND SALARY EMPLOYMENT AT TIME OF THE FOLLOWUP SURVEY

Among the 604 treatment group members, 50.7% were employed in wage and salary jobs at the time of the followup survey. Among the 600 control group members, 54.7% were employed in wage and salary jobs at the time of the survey. These results reinforce the earlier pattern of findings on the likelihood of having a wage and salary job since random assignment. That is, just as we found that treatment group members were less likely than control group members to have a wage and salary job (since random assignment), these results indicate that treatment group members are somewhat less likely to have a wage and salary job at the time of the followup survey.

An important distinction between the earlier result (on wage and salary employment since random assignment) and the present result (on wage and salary employment at survey time) is that the difference between treatment and control group members is not significant at conventional levels. As seen in Table 6.5, the unadjusted impact of -4.0 percentage points and the regression-adjusted impact of -4.8 percentage points are both insignificant at the .10 level. An examination of differences in program impact by gender, site, race and prior business ownership, revealed no significant interaction effects.

TOTAL TIME IN WAGE AND SALARY EMPLOYMENT

As shown in the third panel of Table 6.5, the average time in wage and salary employment during the observation period was 8.5 months for the entire control group. For the

⁴ This interaction effect was significant at the .10 level.

treatment group, the average time in wage and salary employment over the observation period was 7.4 months. As such, the unadjusted program impact on total time in wage and salary employment is -1.1 months, which is significant at the .05 level. The regression-adjusted impact estimate shown in the last column is quite similar (-1.0 months) and is also significant at the .05 level. Thus, we conclude that the SEED program decreased the time spent in wage and salary employment by approximately one month. This one-month decrease in wage and salary employment duration is in contrast with the four-month increase in self-employment duration reported in Chapter 5. An analysis of potential interaction effects revealed no significant interactions.

WAGE AND SALARY EARNINGS

Measuring wage and salary earnings from survey data is less complicated than measuring self-employment earnings. Generally, those in wage and salary employment are paid regularly, their earnings are reasonably stable from month to month and they are more likely to know their earnings than the self-employed. For all these reasons, we had substantially fewer complications in accurately measuring wage and salary earnings than in measuring self-employment earnings.

As shown in the fourth panel of Table 6.5, total wage and salary earnings (over the 21-month observation period) for the entire control group averaged \$17,221. Total earnings for the treatment group averaged \$15,013. This yields an unadjusted impact of -\$2,209, which is not significant at conventional significance levels. However, after controlling for other factors that affect earnings, the regression-adjusted impact of -\$2,518 is significant at the .10 level. Thus, we conclude that SEED had a negative impact on the earnings of participants from wage and salary jobs during the observation period.

In the previous section, we found that treatment group members worked in wage and salary employment one month less than control group members. Above, we found that treatment group members earned approximately \$2,500 less than control group members over the 21-month observation period. It is informative therefore, to investigate whether or not the SEED Demonstration had an impact on monthly average earnings from wage and salary employment.

As seen in the last panel of Table 6.5, the entire control group earned \$1,321 per month on average from wage and salary employment. Neither the unadjusted impact of -\$109 or the regression-adjusted impact of -\$132 are significantly different from zero. Thus, SEED did not have a significant impact on monthly wage and salary earnings.

CHAPTER SUMMARY

In this chapter we examined the wage and salary experiences of treatment and control group members in the SEED Demonstration. The main findings of this chapter are summarized below:

- SEED reduced the likelihood of wage and salary employment during the observation period by 5 percentage points.
- SEED delayed reemployment in a wage and salary job by approximately one month and reduced the total time in wage and salary employment during the 21-month observation period by a similar amount.
- SEED reduced total earnings from wage and salary employment over the observation period by approximately \$2,500.
- SEED did not affect the monthly average earnings from wage and salary employment.

One way to characterize the above results is to that, on average, SEED delayed participants' reemployment in a wage and salary job by approximately one month, and that participants were unable to recover the loss of this one-month delay over the course of the 21-month observation period; as a result, their wage and salary earnings during the observation period were reduced by approximately \$2,500.

IMPACTS ON TOTAL EMPLOYMENT AND EARNINGS

In Chapter 5, we reported that the SEED Demonstration had positive and statistically significant impacts on a number of self-employment outcomes. For example, SEED increased the likelihood of being self-employed, increased self-employment duration, and increased self-employment earnings. In Chapter 6, we reported that SEED had negative impacts on several wage and salary outcomes. We found, for example, that SEED decreased the likelihood of wage and salary employment, decreased time spent in wage and salary jobs, and decreased total wage and salary earnings during the observation period. The overall impacts of SEED on the combination of these two types of employment experiences are, therefore, ambiguous.

In this chapter, we conclude Part II of the report by presenting our findings of the impact of the SEED Demonstration on several combined measures of employment outcomes. First, we examine the impact of SEED on the likelihood of employment (i.e., either wage and salary employment or self-employment) during the 21-month observation period. Next, we report on the effect of the SEED program on the likelihood of either type of employment at the time of the followup survey. Then, we estimate impacts on the combined duration in either type of employment. We then combine earnings from both self-employment and wage and salary employment and examine the impact of SEED on total earnings. The chapter concludes with a brief summary.

LIKELIHOOD OF EITHER WAGE AND SALARY EMPLOYMENT OR SELF-EMPLOYMENT

In this section we present the results of a multivariate analysis of the probability of having either a wage and salary job or being self-employed during the 21-month observation period. The dependent variable in these regressions is dichotomous (i.e., equal to one for those who had either type of employment experience during the observation period and zero

otherwise). As in previous chapters, the covariates used in these regressions include demographic characteristics, education level, prior occupation, prior work experience, prior self-employment experience, prior earnings, timing of the initial UI claim, family background, and site variables. Appendix A contains a complete description of the control variables.

The regression results presented in Table 7.1 indicate that the SEED Demonstration had a significant and positive impact on the likelihood of being employed in either wage and salary or self-employment during the observation period.¹ Indeed, the regression-adjusted impact estimate indicates that, on average, the demonstration increased the likelihood of employment by 4.8 percentage points. The only other factor that exerted a statistically significant impact on the likelihood of being employed during the observation period was prior earnings. In particular, being a high or medium earner in the four quarters before filing the UI claim is estimated to increase the likelihood by 8 and 7 percentage points, respectively, of being employed as compared to claimants with relatively low earnings.

An analysis of subgroup interactions (not shown here) revealed one significant interaction effect. Specifically, we found that the SEED Demonstration had a greater impact on the likelihood of employment for treatment group members who owned a business at the time of application to SEED than for treatment group members who did not own a business at application.² The impact of the treatment did not differ for any of the other subgroups investigated.

EMPLOYMENT AT TIME OF THE FOLLOWUP SURVEY

In addition to examining whether demonstration participants obtained any job during the observation period, it is also important to understand the extent to which claimants remain employed at these or other jobs by the time of the followup survey. Among all 604 treatment group members, 73.6 percent were employed in either self-employment or in a wage and salary job at the time of the followup survey. As shown in the second row of Table 7.2, among the

¹ For the entire control group, the likelihood of either wage and salary or self-employment was 86.5 percent; for the treatment group the likelihood was 91.6 percent. The 5.1 percent unadjusted impact estimate (reported in the first row of Table 7.2) is significant at the .01 level.

² This interaction effect was significant at the .01 level.

Table 7.1
Coefficient Estimates on the Likelihood of Either Wage and Salary or Self-Employment
 (Standard Errors in Parentheses Beneath Coefficients)

Independent Variables	OLS Model	Logit Model
Treatment Group Dummy	4.8*** (1.8)	.51*** (.20)
Vancouver Dummy	-1.6 (3.5)	-.10 (.34)
King County Dummy	3.5 (4.1)	.40 (.42)
Snohomish County Dummy	1.4 (4.3)	.18 (.43)
Wenatchee Dummy	7.9 (4.9)	1.1* (.62)
Yakima Dummy	1.6 (5.5)	.16 (.60)
Benefit Year Started in Quarter 1 of 1990	1.0 (2.4)	.12 (.27)
Benefit Year Started in Quarter 2 of 1990	-2.1 (2.2)	-.21 (.24)
Benefit Year Started in Quarter 4 of 1989	4.9 (4.5)	.48 (.47)
Age (in years)	.5 (-.01)	.03 (.07)
Age Squared	.01 (.01)	-.0006 (.0008)
Male Dummy	-2.9 (2.0)	-.34 (.22)
White Dummy	3.1 (4.0)	.38 (.41)
Completed College Dummy	-.9 (2.2)	-.09 (.23)

Table 7.1
Coefficient Estimates on the Likelihood of Either Wage and Salary or Self-Employment
(Standard Errors in Parentheses Beneath Coefficients)

Independent Variables	OLS Model	Logit Model
Prior Job in Professional, Technical or Managerial Profession Dummy	1.0 (2.1)	.09 .23
Prior Job in Services Sector Dummy	-4.7** (2.0)	-.51** (.21)
Intend to Return to Prior Employer	-2.8 (2.5)	-.29 (.25)
Spouse Employed Dummy	-2.3 (1.9)	-.24 (.20)
Children Under Age Six Dummy	-1.7 (2.3)	-.18 (.24)
Prior Work Experience in the Area of the Proposed Business	3.5 (2.5)	.38 (.25)
Had a Business at the Time of SEED Application	-5.2 (3.2)	-.53* (.31)
Had Been Self-Employed Prior to SEED Application	-3.4 (2.1)	-.36 (.22)
High Wage Earner in the Four Quarters Before UI claim	7.9*** (2.9)	.81*** (.30)
Medium Wage Earner in the Four Quarters Before UI Claim	6.7*** (2.3)	.67*** .23
Unemployment Rate in the claimant's county of residence during 1990	.5 (.9)	.06 (.09)
Intercept	72.5*** (16.1)	.94 (1.67)

***Indicates coefficient is significantly different from zero at the .01 level.

**Indicates coefficient is significantly different from zero at the .05 level.

*Indicates coefficient is significantly different from zero at the .10 level.

600 control group members, 68.3 percent were employed in some type of job at the time of the survey. This corresponds to an unadjusted impact of SEED of 5.3 percentage points on the likelihood of either type of employment at the time of followup survey (significant at the .05 level) and the regression-adjusted impact is 4.6 percentage points (significant at the .10 level). This corresponds to approximately a seven percent effect on employment evaluated at the mean employment rate of the control group. Thus, SEED had an unambiguous positive net impact on the likelihood of employment at the time of the followup survey.

An analysis of subgroup interaction effects (not reported here) again revealed a significant interaction effect with business ownership at the time of application. SEED had a greater impact for treatment group members who owned a business at the time of application than for treatment group members who did not own a business at application (this interaction effect was significant at the .05 level). We did not find any other significant interaction effect.

COMBINED TIME IN WAGE AND SALARY EMPLOYMENT AND SELF-EMPLOYMENT

The effects of the demonstration on total time in either wage and salary or self-employment are also presented in Table 7.2. As shown in the third row, the average total time in either wage and salary employment or self-employment during the observation period for the entire control group was 10.5 months. For the treatment group, the comparable duration figure is 12.6 months. As seen in Table 7.2, the unadjusted program impact on total time in either type of employment is 2.1 months; the regression-adjusted impact is 2.3 months. Both impact estimates are statistically significant at the .01 level. Thus, we conclude that the SEED program unambiguously increased total time in employment by approximately two months.

An analysis of subgroup interactions (not shown here) revealed similar interactions to those found above (in the analysis of employment likelihood). That is, SEED had a greater impact on treatment group members who owned a business at the time of application than on treatment group members who did not own a business at application.³ The impact of the treatment did not differ for any other subgroups investigated.

³ This interaction effect was significant at the .01 level.

Table 7.2
SEED Impacts on Wage and Salary and Self-Employment Outcome Measures
 (Standard Errors in Parentheses)

Outcome Measure	Control Group Mean	Unadjusted Impacts	Regression Adjusted Impacts
Likelihood of either wage and salary or self-employment during observation period	86.5	5.1*** (1.8)	4.8*** (1.8)
Likelihood of either wage and salary or self-employment at time of survey	68.3	5.3** (2.6)	4.6* (2.6)
Total time employed during observation period (in months)	10.5	2.1*** (.5)	2.3*** (.5)
Total earnings during observation period	17,497	1,974 (2,084)	1671 (2036)
Average monthly earnings	1,278	-13.0 (112.0)	-30.2 (109)

***Indicates coefficient is significantly different from zero at the .01 level.

**Indicates coefficient is significantly different from zero at the .05 level.

*Indicates coefficient is significantly different from zero at the .10 level.

TOTAL EARNINGS

Among the entire control group, total earnings from both wage and salary employment and self-employment over the 21-month observation period averaged \$17,497 (see row four of Table 7.2). Average total earnings for the treatment group was \$19,471. While the unadjusted impact of \$1,974 and the regression-adjusted impact of \$1,671 are both positive, they are not significant. Thus, we cannot conclude that SEED had any impact on combined total earnings from all employment over the 21-month observation period.

It is important to note that the above estimated impact on total earnings may be biased downward due to the differential underreporting of self-employment earnings relative to wage and salary earnings. Since treatment group members experienced substantially more self-employment than control group members, underreporting of self-employment earnings will reduce their total earnings relative to control group members' total earnings.

Finally, we examined average monthly earnings from all employment and obtained results similar to the total earnings findings. As seen in the fifth row of Table 7.2, the entire control group earned \$1,278 per month from either wage and salary or self-employment. The unadjusted impact of -\$13 and the regression-adjusted impact of -\$30 are both statistically insignificant. Thus, SEED did not significantly affect the monthly earnings of program participants.

An examination of differences in impacts by subgroups did not reveal any significant interaction effects on either total earnings or monthly earnings. Thus, although the SEED program differentially increased the employment outcomes depending on whether the claimants owned a business at the time of SEED application, we find no interaction effects on total earnings during the observation period.

CHAPTER SUMMARY

In this chapter we analyzed the combined self-employment and wage and salary experience of treatment and control group members in the SEED Demonstration. The basic findings of this chapter are summarized below:

- SEED increased the likelihood of employment (in either wage and salary or self-employment) during the observation period by approximately 5 percentage points.
- Similarly, SEED increased the likelihood of employment (in either wage and salary or self-employment) at the time of the followup survey by approximately 5 percentage points.
- Treatment group members were employed (in either wage and salary or self-employment) two months longer during the observation period than control group members.
- SEED did not significantly affect either total earnings during the observation period or average monthly earnings.

Thus, SEED exerted significant positive impacts on the likelihood of employment and the duration of employment during the observation period. This indicates that SEED represents a viable policy for promoting the rapid reemployment of unemployed workers. The program did not, however, have a significant impact on the combined total earnings from wage and salary employment and self-employment.

PART III

OTHER IMPACTS OF THE SEED DEMONSTRATION

IMPACT RESULTS USING ADMINISTRATIVE DATA

In Part II of the report, we examined the impacts of SEED on various measures of self-employment and wage and salary employment and earnings using data from the first followup survey. In Part III, we supplement these findings by providing estimates of the impact of SEED on other outcome measures. Specifically, in Chapter 8, we examine the impacts of SEED on several outcome measures developed from administrative data sources to determine whether the results from the followup survey are broadly consistent with those obtained from a less expensive source. Although we regard the impact results based on the survey data presented in previous chapters the best estimates of SEED impacts on employment-related outcomes, the results described in this chapter provide valuable additional evidence concerning SEED impacts on similar outcome measures, as well as insights into the benefits and limitations of administrative data sources for assessing program impacts. In Chapter 9, we provide evidence on the indirect impacts of SEED on job creation and job satisfaction.

As described in Chapter 3, a potential limitation of using certain administrative records for developing impact estimates arises for individuals who live near state borders. Specifically, because the administrative records systems are state-based, it is impossible to distinguish individuals who work across the border in a different state -- either in self-employment or in wage and salary employment-- from individuals who do not work at all. This is particularly problematic for claimants in the Vancouver site -- who comprise roughly one-quarter of the SEED analysis sample -- most of whom live within a few minutes of the Oregon border and the Portland metropolitan area. To address this issue, the results in this chapter are presented for all claimants in the SEED Demonstration, as well as separately for the subset of claimants in the five sites other than Vancouver.

The chapter is organized as follows. First, we present results of SEED impacts on several self-employment outcome measures based on Department of Revenue (DOR) records. We then present the estimates of the impacts of SEED on employment and earnings in covered wage and salary employment based on UI Wage Records. This is followed by an analysis of the impacts of SEED on UI administrative outcomes. The chapter concludes with a brief description of the extent to which SEED impacts on these different outcome measures vary by key sub-groups.

SEED IMPACTS ON DOR OUTCOME MEASURES

Using DOR records, we developed comparable measures of self-employment outcomes for treatment and control group members. The measures included indicators of business income receipt during 1990 and 1991¹; whether the business was still open²; gross business receipts during 1990 and 1991; and sales taxes and business and occupation taxes paid in 1990 and 1991. In Table 8.1 we report the mean values for the entire control group on each of these outcome measures, the simple difference in means between the treatment and control groups on each measure, and the regression-adjusted impacts for each measure.³ As expected, because of random assignment, the regression-adjusted impacts are virtually identical to the unadjusted impacts. Therefore, the discussion below focuses on the impact measures based on simple differences in means between the treatment and control groups.

Consistent with the findings presented in Chapter 5, these results indicate that SEED has an economically important, positive and statistically significant impact on self-employment

¹ Although the data for 1991 are clearly post-enrollment for all demonstration claimants, the measures for 1990 could include business income that occurred before the claimant enrolled in SEED.

² Because we obtained the DOR data in July 1992, information on whether the business was still open was based on available data at that time. Because most claimants are on an annual reporting period and there is no requirement to report a business closure until the end of the year -- six months after we received the data -- it is likely that our measure overstates the number of open businesses as of July 1992. In fact, it may be a better measure of the number of open businesses as of the end of 1991.

³ The covariates used in these regressions are the same as those employed in previous chapters. See Appendix A for a complete list of covariates and their definitions.

Table 8.1
SEED Impacts on Business Outcome Measures
 (Standard Errors in Parentheses)

Outcome Measure	Control Group Mean	Unadjusted Impacts	Regression Adjusted Impacts
Percent Positive Business Income in 1990	12.0	16.8*** (2.0)	17.3*** (2.0)
Percent Positive Business Income in 1991	13.7	10.9*** (2.0)	11.6*** (1.9)
Percent Received Business Income After BYS	17.0	17.7*** (2.2)	18.6*** (2.1)
Percent Business Still Open	21.4	23.4*** (2.4)	24.1*** (2.3)
Percent Business Still Open and Some Income Received	14.0	13.1*** (2.0)	13.8*** (2.0)
Gross Business Receipts in 1990 (\$1,000s)	2.1	2.3** (1.2)	2.3** (1.0)
Gross Business Receipts in 1991 (\$1,000s)	4.7	7.5*** (2.4)	7.8*** (2.4)
Sales Taxes Paid in 1990 (\$)	49.8	53.6* (29.1)	53.7* (28.9)
Sales Taxes Paid in 1991 (\$)	115.5	166.1*** (60.3)	172.1*** (59.7)
Business and Occupation Taxes Paid in 1990 (\$)	12.6	11.8** (5.1)	11.3** (5.0)
Business and Occupation Taxes Paid in 1991 (\$)	31.0	56.7*** (20.2)	57.8*** (19.9)

***Indicates coefficient is significantly different from zero at the .01 level.

**Indicates coefficient is significantly different from zero at the .05 level.

*Indicates coefficient is significantly different from zero at the .10 level.

outcomes. In general, the impact is roughly of the same size (or larger) than the mean value for the control group. Thus, the size of the SEED impacts on these measures are roughly 100 percent, and in some cases much larger.

As shown in the first column of Table 8.1, in 1990, 12.0 percent of claimants in the control group had businesses that received some income/sales; in 1991, this increased slightly to 13.7 percent. Although not reported in the table, this can be broken down as follows: 8 percent of controls received business income in both 1990 and 1991; 4 percent received business income in 1990 but not in 1991; 5 percent first received business income in 1991. Thus, of the 12 percent of controls who had a business in 1990, it appears that about one-third did not have any business income in 1991 and may have closed their business. This is consistent with the results on self-employment termination presented in Chapter 5.

In the second column of Table 8.1, we show the unadjusted SEED impacts on these measures. Consistent with the results described in Chapter 5, claimants in the treatment group are much more likely to be active in business during 1990-1991 and have received some business income. For example, as shown in the first row of Table 8.1, SEED had a 16.8 percentage point effect on the likelihood of having an active business in 1990 and a 10.9 percentage point effect on the same measure in 1991. These impacts correspond to approximately a 140 percent effect of the mean of the control group in 1990 and an 80 percent effect in 1991. Thus, it appears that the impacts of the program on the likelihood of being in business are somewhat larger in the short-term, and that some of the businesses established by treatment group members in 1990 were no longer active in 1991.

As shown in the third row of Table 8.1, 17 percent of the controls had an active business at some point after they filed their UI claim and entered the demonstration (i.e., either in 1990 or 1991). In contrast, 34.7 percent of the treatment group established businesses that received some income during this period. The results in the second column indicate that the (unadjusted) impact of SEED on the percent of claimants involved in active businesses after filing their UI claim is 17.7 percentage points, or roughly 104 percent of the mean of the control group.

Although not reported in Table 8.1, we find that the roughly 35 percent of the treatment group who received some business income after filing their UI claim can be decomposed as follows: 19 percent received business income in both 1990 and 1991; 10 percent received business income in 1990 but not in 1991; and 6 percent first received business income in 1991.

Thus, similar to the control group, roughly one-third of the claimants in the treatment group who received business income in 1990 did not receive any business income in 1991 and may have closed. The fact that the rate of business failure appears to be similar for treatments and controls is consistent with the results in Chapter 5.

The next two outcome measures reported in Table 8.1 comprise more direct measures of whether the business is still open. As shown in Table 8.1, 21.4 percent of controls' businesses were still open at the time the data were collected (July 1992) and two-thirds of these open businesses (14 percent) had received some income after the individual filed the initial UI claim.⁴ The impact of SEED on both of these measures was large and statistically significant (90-110 percent effect of the mean).

The next measure concerns gross business receipts. This includes gross sales as well as income received for services provided. This outcome measure is calculated over all SEED participants, regardless of whether the person established a business; thus, individuals who did not start a business during the period are assigned zero values for their gross business income. In the first column of Table 8.1, we see that the control group averaged \$2,100 in gross business income in 1990 and \$4,700 in 1991.⁵ The impact of SEED on gross business receipts is substantial and statistically significant in both periods. In particular, we estimate the impact of SEED on gross business income to be \$2,300 in 1990 and \$7,500 in 1991.⁶ Given the mean values of the control group, these impact estimates correspond to increases in gross business income in excess of 100 percent.

⁴ The much larger fraction of controls with open businesses than those who reported positive business income in 1990 or in 1991 is likely to in part reflect a problem in using DOR data to measure whether a business has closed. First, as described above, we obtained these data in July 1992, and many individuals who had closed their business in the first 6 months of 1992 would not report this information until January 1993 when they are required to submit forms to DOR and pay taxes. Second, many individuals who are not active in business may not bother to officially close the business for some time, but rather keep the business license active by simply reporting "no activity" on their state tax return. Thus, it is likely that we overstate the number of open businesses with these DOR data.

⁵ If one instead averaged only over those individuals who had positive business income in the year, the average gross income of control group members active in business was \$17,500 in 1990 and \$34,300 in 1991.

⁶ It is interesting to note that among those individuals in the treatment group who had positive business income in the year, the average gross income of treatment group members active in business was \$15,300 in 1990 and \$49,600 in 1991.

In the last four rows of Table 8.1 we provide information on taxes paid by businesses operated by treatment and control group members. This includes sales taxes collected on behalf of the State as well as any business and occupation taxes paid. As indicated in Table 8.1, over all control group members, the average amount of sales taxes paid in 1990 was \$50 and in 1991 it was \$115. The average amount of business and occupation taxes paid by the control group members overall was much less: about \$13 per claimant in 1990 and \$31 per claimant in 1991. Consistent with the results described above, the impact of SEED on taxes paid was statistically significant, and roughly 100 percent of the control group mean or larger. For example, in 1991, the difference between treatment and control group members in sales taxes paid was \$166 per claimant on average, and about \$57 on average for business and occupation taxes paid. Thus, in 1991, it seems that treatment group members on average paid \$223 per person more in sales and business/occupation taxes than control group members.

In Table 8.2 we present impact results on these same DOR outcome measures after excluding all treatment and control group members who were in our Vancouver site. As described above, we excluded these demonstration members to determine whether the estimated impacts were sensitive to the potential problem with using DOR records that only include Washington State businesses, (individuals living in Vancouver may have established businesses across the border in Oregon). As shown in Table 8.2, the means of these measures for the control group and the unadjusted and adjusted impacts are strikingly similar to the results presented in Table 8.1 over the entire sample. Thus, it appears that the estimated impacts of SEED on self-employment outcomes are not sensitive to this data limitation.

SEED IMPACTS ON WAGE AND SALARY EMPLOYMENT AND EARNINGS USING UI WAGE RECORDS

As described in Chapter 3, in addition to obtaining survey data on wage and salary employment, we also obtained UI Wage Records for treatment and control group members who worked in covered employment in the post-program period. In particular, for this interim report, we had complete information on wages and hours worked in covered employment for the quarter the claim was filed and for the following five calendar quarters. These data were used to construct measures of whether claimants worked in covered employment in the first year

Table 8.2
SEED Impacts on Business Outcome Measures Excluding Vancouver
(Standard Errors in Parentheses)

Outcome Measure	Control Group Mean	Unadjusted Impacts	Regression Adjusted Impacts
Percent Positive Business Income in 1990	13.2	15.3*** (2.3)	16.1*** (2.2)
Percent Positive Business Income in 1991	14.0	11.6*** (2.3)	12.4*** (2.2)
Percent Received Business Income After BYS	17.7	17.3*** (2.5)	18.4*** (2.4)
Percent Business Still Open	21.5	25.8*** (2.6)	26.7*** (2.6)
Percent Business Still Open and Some Income Received	14.4	13.5*** (2.3)	14.4*** (2.3)
Gross Business Receipts in 1990 (\$1,000s)	2.4	2.4** (1.3)	2.4** (1.3)
Gross Business Receipts in 1991 (\$1,000s)	4.7	8.8*** (3.0)	9.2*** (3.0)
Sales Taxes Paid in 1990 (\$)	55.4	52.5 (34.9)	50.6 (34.7)
Sales Taxes Paid in 1991 (\$)	106.7	199.1*** (70.3)	205.6*** (69.7)
Business and Occupation Taxes Paid in 1990 (\$)	11.8	11.8** (5.8)	11.1* (5.7)
Business and Occupation Taxes Paid in 1991 (\$)	27.2	68.8*** (24.7)	70.3*** (24.5)

***Indicates coefficient is significantly different from zero at the .01 level.

**Indicates coefficient is significantly different from zero at the .05 level.

*Indicates coefficient is significantly different from zero at the .10 level.

following enrollment in SEED, hours worked and earnings during the first year, as well as the composition of total earnings by quarter.⁷ Using information on the employer tax account number, we were also able to determine whether claimants returned to work for the same employer after becoming unemployed and filing their UI claim.

In Table 8.3, we report the impact results for several of these measures of wage and salary employment developed from UI Wage Records. As described below, consistent with the results presented in Chapter 6, it appears that SEED has a negative and statistically significant impact on (covered) wage and salary employment and earnings.

The first three rows of Table 8.3 provide summary information on wage and salary employment during the first year after enrolling in SEED. We find that 77.3 percent of controls worked in covered employment in Year 1, working an average of just under 800 hours and receiving approximately \$9,000. Recalling that the average earnings of control group members in the year before filing for UI benefits was about \$21,000 (see Chapter 4), this indicates that wage and salary earnings in covered employment declined for the control group by about \$12,000. Thus, relative to their pre-UI annual earnings, the control group only received slightly over 40 percent of their earnings on average in the four quarters period following the quarter they filed for UI benefits.

In the second column of Table 8.3 we show the unadjusted SEED impacts on these three measures and the third column reports the regression-adjusted impacts. The results in these two columns are extremely similar and indicate that although treatment group members were not significantly less likely to work in covered employment at some time during the year, they worked 95 fewer hours and received about \$1,000 less wages than the control group on average. According to the regression-adjusted estimates, these impacts are both significant at the .05 level. The impacts of SEED on total earnings and hours correspond to effects of slightly over 10 percent of the mean of the control group.

The next four rows of Table 8.3 present information on the decomposition of the earnings impacts by quarter. As this table indicates, the average earnings in covered employment of control group members consistently increases over the four complete quarters following SEED enrollment, from \$1,631 in the first quarter to \$2,669 in the fourth quarter. This pattern is

⁷ By the first year following SEED enrollment, we mean the first four complete calendar quarters following the quarter in which the claimant filed for UI benefits and entered the demonstration.

Table 8.3
SEED Impacts on Employment and Earnings Measures
 (Standard Errors in Parentheses)

Outcome Measures	Control Group Mean	Unadjusted Impacts	Regression Adjusted Impacts
Percent Work in Covered Employment in Year 1	77.3	-2.7 (2.2)	-2.8 (2.2)
Total Hours Worked in Covered Employment in Year 1	792.3	-95.1** (37.7)	-94.2** (37.0)
Earnings in Covered Employment in Year 1 (\$)	9,060	-1,010.7* (528.7)	-1,038.2** (510.4)
Earnings in Covered Employment in Quarter 1 (\$)	1,631	-321.9** (136.3)	-326.1*** (134.0)
Earnings in Covered Employment in Quarter 2 (\$)	2,254	-337.8** (156.3)	-356.0** (152.1)
Earnings in Covered Employment in Quarter 3 (\$)	2,505	-188.8 (163.1)	-197.2 (158.9)
Earnings in Covered Employment in Quarter 4 (\$)	2,669	-162.3 (172.5)	-159.0 (166.9)
Percent Return to Same Major Employer in Year 1	21.2	-1.9 (2.1)	-2.6 (2.0)

***Indicates coefficient is significantly different from zero at the .01 level.

**Indicates coefficient is significantly different from zero at the .05 level.

*Indicates coefficient is significantly different from zero at the .10 level.

expected as control group members return to work over time. Although the impact estimates are negative for all four quarters, the results in the second column indicate that most of the impact of SEED in reducing earnings in wage and salary employment occurs during the first two quarters after enrollment. Specifically, the estimated impacts for each of the first two quarters are approximately -\$330 (and statistically significant), indicating that about two-thirds of the total impact in Year 1 occurs in the first six months.⁸

In the final row of Table 8.3 we present estimated impacts of SEED on the likelihood of returning to the same employer during Year 1. In particular, this outcome measure captures the percentage of individuals who returned to work to their major employer -- the one they earned the most wages from in the year before filing for UI benefits -- at some time during Year 1. Thus, we are not capturing whether the individual directly returned to work at the previous employer after a period of unemployment, but whether s/he returned to work with the previous employer at some time within a year. We find that 21.2 percent of the controls returned to work for their previous employer as compared to 19.3 percent of the treatment group; the estimate of a reduction of 1.9 percentage points due to SEED was statistically insignificantly different from zero. Thus, although the demonstration was designed to attract individuals interested in self-employment who were not job-attached, it appears that about one-fifth did return to their previous employer at some time during the following year.

In Table 8.4, we present impact results on these same employment and earnings outcome measures after excluding all treatment and control group members who were in our Vancouver site. Unlike our results for the DOR measures, it appears that the employment and earnings impacts are quite sensitive to the fact that we only have UI Wage Records for individuals who work in covered employment in Washington State. In particular, nearly all of the estimated SEED impacts in Table 8.4 are considerably more negative than those reported in Table 8.3. For example, the reductions in total earnings and hours worked in Year 1 are both about 40 percent larger. Moreover, the pattern of earnings impacts by quarter reported in Table 8.4 are quite different from those reported in Table 8.3. In particular, the estimated impacts are statistically significant in each of the four quarters and are extremely similar in magnitude across all four quarters (\$320 - \$410), suggesting no time trend in impacts. This suggests that many

⁸ Although not shown in the table, we also examined the impact on hours worked by quarter. The pattern of these results by quarter are extremely similar to those for earnings.

Table 8.4
SEED Impacts on Employment and Earnings Measures Excluding Vancouver
(Standard Errors in Parentheses)

Outcome Measures	Control Group Mean	Unadjusted Impacts	Regression Adjusted Impacts
Percent Work in Covered Employment in Year 1	80.1	-3.3 (2.4)	-3.9* (2.3)
Total Hours Worked in Covered Employment in Year 1	868.6	-141.2** (42.4)	-149.7*** (42.3)
Earnings in Covered Employment in Year 1 (\$)	9,944	-1,452.6** (612.7)	-1,681.7*** (599.4)
Earnings in Covered Employment in Quarter 1 (\$)	1,685	-328.7** (151.4)	-376.9** (149.5)
Earnings in Covered Employment in Quarter 2 (\$)	2,436	-407.8** (181.3)	-494.5*** (178.0)
Earnings in Covered Employment in Quarter 3 (\$)	2,784	-322.8* (187.3)	-377.1** (184.9)
Earnings in Covered Employment in Quarter 4 (\$)	3,040	-393.3** (200.5)	-433.2** (196.7)
Percent Return to Same Major Employer in Year 1	23.5	-1.4 (2.4)	-2.8 (2.3)

***Indicates coefficient is significantly different from zero at the .01 level.

**Indicates coefficient is significantly different from zero at the .05 level.

*Indicates coefficient is significantly different from zero at the .10 level.

treatment and control group members in Vancouver went to work for others in Oregon, and that by treating their earnings as zero in the results in Table 8.3, the estimated SEED impacts were biased toward zero. Thus, our preferred estimates of SEED impacts on employment and earnings outcomes based on UI Wage Records are given by the results in Table 8.4, which are also more consistent with the findings from the survey data reported in Chapter 6 that avoid this data problem.

SEED IMPACTS ON UI OUTCOME MEASURES

The measures of UI benefit receipt were developed from the UI history files in the PTS that contained records for each person of all weeks claimed following the initial claim for UI benefits. Using these data, we developed four main measures of UI benefit receipt: (i) number of weeks of the first spell of UI receipt⁹; (ii) total UI benefits received during the first spell; (iii) the dollar amount of benefits paid in the benefit year; and (iv) the exhaustion rate. By including both the dollars paid during the first spell and the dollars paid in the benefit year, we are able to examine both short- and longer-term effects on insured unemployment. In addition to these main measures, we also provide information on lump-sum payments received and total benefits received including lump-sum payments.¹⁰

As shown in the first column of Table 8.5, controls experienced first spells of UI benefits of 17.5 weeks on average and received an average of \$3,368 during the first spell. Because controls received \$3,777 on average during the entire benefit year, it is clear that the large

⁹ The first spell of UI benefits is conceptually defined as weeks of continuous receipt of UI payments, and does not include the waiting week. Although the first spell normally starts at the beginning of the UI claim, some individuals filed a UI claim and did not receive any payments for many weeks. For these individuals, the first spell starts at the time they begin receiving UI payments. Also, in conceptually attempting to link the end of a spell with the beginning of a job, we do not consider a spell to have ended if there is a minimal break in receipt of payments after which respondents continue to receive UI benefits. Because Washington State uses a bi-weekly payment system, we decided to concatenate spells that had breaks of two weeks or less in payments and treat them as a single spell of length equal to the number of weeks with positive payments. In this way, we ensure that claimants who receive a UI payment every two weeks have not ended their spell.

¹⁰ Because our sample of claimants can only receive UI benefits paid from Washington State during this period, it is not necessary to exclude those who live near the border in Vancouver to obtain valid estimates of the impacts of SEED on UI benefit outcome measures. As a result, unlike the format used to report results for self-employment and wage and salary employment and earnings measures, we do not include a table that shows the estimated impacts after excluding claimants who enrolled in SEED in Vancouver.

Table 8.5
SEED Impacts on UI Outcome Measures
 (Standard Errors in Parentheses)

Outcome Measures	Control Group Mean	Unadjusted Impacts	Regression Adjusted Impacts
Length of First Spell of UI (Weeks)	17.5	-6.1*** (0.5)	-6.1*** (0.5)
UI Benefits Received During First Spell (\$)	3,368	-1,281.9*** (107.2)	-1,270.2*** (99.1)
Total UI Benefits Received During Benefit Year (\$)	3,777	-1,440.9*** (108.3)	-1,430.8*** (100.0)
Total UI Benefits + Lump-Sum Payments (\$)	3,777	1,081*** (121.7)	1111.9*** (101.4)
Percent Exhausted UI Claim	40.3	-25.3*** (2.2)	-25.5*** (2.2)
Percent Exhausted UI Claim or Received Lump-Sum Payment	40.3	33.5*** (2.4)	34.0*** (2.4)

***Indicates coefficient is significantly different from zero at the .01 level.

**Indicates coefficient is significantly different from zero at the .05 level.

*Indicates coefficient is significantly different from zero at the .10 level.

majority (nearly 90 percent) of the UI payments received occurred during the first spell. The unadjusted and regression-adjusted impact estimates reported in Table 8.5 are virtually identical and indicate that SEED had a significant impact in reducing the amount of UI benefits received by claimants. For example, we estimate that SEED reduced the length of the first spell of UI by about 6 weeks and reduced UI benefits during that spell by nearly \$1,300 on average. Evaluated at the means of the control group, these estimates correspond to 34 and 38 percent effects for the two measures. It is also clear that the large majority of the impact on UI benefits paid occurred during the first spell as our estimate of the impact of SEED on the total UI dollars received during the benefit year of -\$1,441 is only slightly larger than the impact for the first spell (-\$1282).

As described in Chapter 4, a total of 451 claimants in the treatment group completed their required project milestones and obtained a lump-sum payment. The average lump-sum payment for these 451 claimants was \$4,225. Although these lump-sum payments were made with federal research funds -- and not from the UI Trust Fund -- it is important to understand what the total impact would be if these payments were paid out of the same funding source.¹¹

As shown in the fourth row of Table 8.5, taking into account both UI benefit payments plus lump-sum payments, treatments received \$1,081 more on average from these sources than controls.¹² Specifically, the treatment group received an average of \$4,858, as compared to \$3,777 for the control group. Thus, there would be a net cost in the short-term of slightly over \$1,000 per claimant for operating a self-employment program like SEED that included lump-sum payments for claimants who complete a similar set of milestones.

The results in the fifth row of Table 8.5 indicate that approximately 40 percent of the claimants in the control group exhausted their UI benefits. Without considering the lump-sum payments made to some control group members, the unadjusted impact results indicate that SEED had a 25 percentage point reduction in the probability of exhausting the UI claim. However, if we consider treatment group members who received lump-sum payments to have effectively exhausted their claim then, as shown in the last row of Table 8.5, this result is

¹¹ For example, one possible funding source is the UI Trust Fund. Alternatively, lump-sum payments could be funded from State general revenue funds.

¹² This difference varied across sites from a low of about \$700 in Wenatchee to a high of roughly \$1,400 in King County.

strongly reversed. Specifically, using this modified measure, 73.8 percent of the treatment group would be considered to have exhausted their benefits, which corresponds to a 33.5 percentage point increase in this exhaustion rate measure due to SEED.

A related issue concerns the extent to which SEED was able to simulate a policy of cashing out UI benefits. As described in Chapter 2, although the lump-sum component of the SEED Demonstration was intended to simulate a cash-out of UI benefits, because UI is an entitlement program and these benefits could not be denied for demonstration purposes, it was not strictly possible to test a cash-out policy. Operationally, this meant that participants could return to the regular UI program after receiving their lump-sum payment and draw the remainder of their UI entitlement in the form of bi-weekly payments provided they met the normal UI eligibility requirements, including the work search requirement. We expected most treatment group members who received a lump-sum payment to be committed to starting their own businesses, and that not many would return to UI and collect their remaining entitlement within their benefit year.

Our results indicate that, for the most part, SEED can be considered to have tested a cash-out policy. Specifically, only 6.9 percent of the treatment group members who received a lump-sum payment (4.1 percent of the entire treatment group) returned to UI after receiving their lump-sum payment to draw additional UI payments from their original claim. Among those who returned to UI, the average additional UI benefits received was \$1,839. This corresponds to about \$75 per claimant over the entire treatment group.

SEED IMPACTS BY SUB-GROUPS

We also examined the extent to which SEED impacts on the outcome measures for self-employment, wage and salary employment, and UI benefits received differed for several key sub-groups. In particular, we examined whether the impacts differed depending on gender, race, site, prior earnings, prior business experience, or whether the person reported on their SEED application that s/he intended to return to work at the previous employer. The results were obtained using the regression model described earlier that included a number of control variables and a treatment dummy and then adding variables for the treatment dummy interacted with the

specific sub-group characteristics of interest. We estimated separate models for each of the different sub-groups tested.

Based on formal F-tests, these results indicated that the effects of SEED in increasing self-employment activity and in reducing wage and salary employment and earnings are widespread and not concentrated among specific demographic subgroups. In particular, none of the interactions tested by gender, race, site, prior business experience, or whether claimant intended to return to prior employer were statistically significant. There was, however, a pattern in the impacts of SEED on self-employment outcomes by level of prior earnings, in which the treatment was less effective in increasing business activity for those with relatively low prior earnings (i.e., in the lowest quartile) than for those with higher earnings. This was true for the likelihood of having an active business (i.e., a business with sales and/or income) and of having a business that is still open. We also found that the treatment effect on gross business income in 1990 and 1991 for those with high prior earnings was positive and statistically significant, indicating that the treatment was more effective in increasing the income of more-advantaged claimants.¹³ These interaction effects for medium and high earners are broadly consistent with the findings described in earlier chapters.

CHAPTER SUMMARY

In this chapter we used administrative data to examine the impact of SEED on a variety of outcomes. Specifically, we evaluated self-employment outcomes using DOR data, wage and salary employment and earnings outcomes using UI Wage Records, and unemployment outcomes using UI benefit payment data. The main findings of this chapter are summarized below:

- SEED increased the likelihood of having an active business and receiving business income during 1990-1991.
- Treatment and control group members had similar rates of business failure.

¹³ For example, the positive and significant average treatment effect on gross business income in 1990 and 1991 is entirely due to the effect of the treatment for high-earners. That is, the coefficient of the treatment dummy becomes insignificant when the interaction terms are added and only the term for treatment x higher earner is significant (and positive). The estimated coefficient of the interaction term in thousands of dollars is 4.8 in 1990 and 21.6 in 1991.

- SEED increased gross business income, as well as state sales and business/occupation taxes.
- SEED did not affect the likelihood of working in covered employment at some time during the four quarters following the quarter in which the UI claim was filed.
- SEED reduced the hours worked in covered employment as well as the earnings from jobs in covered employment.
- SEED reduced the length of the first paid unemployment spell by about 6 weeks.
- The effect of SEED on the level of UI benefits received depends on how lump-sum payments are treated: if lump-sum payments are not considered, then SEED reduced the level of UI benefits paid; if, instead, we combine lump-sum payments with UI benefit payments, then SEED increased the level of total UI benefit payments.

An additional important result of this chapter is that all of the findings are consistent with the results derived from survey data and reported in previous chapters. This is particularly important given the relatively low cost of using administrative data for program evaluations.

IMPACTS ON JOB CREATION AND JOB SATISFACTION

In previous chapters we estimated SEED's direct impacts on the employment experiences of program participants. The SEED Demonstration, however, may also have had indirect impacts on employment. That is, by increasing the number of businesses created, the SEED Demonstration may have generated new jobs for nonparticipants. Since these jobs would not have existed without the additional businesses created, we may consider these new jobs to be an impact of the SEED Demonstration.

In addition to an indirect impact on job creation, the SEED Demonstration may also have had an indirect impact on job satisfaction. If participants find self-employment more satisfying than wage and salary employment, by increasing the number of self-employed individuals, the SEED Demonstration may have increased the level of job satisfaction among program participants.

In the sections that follow we first analyze SEED's indirect impact on job creation by comparing the employment level in treatment group businesses with the employment level in control group businesses. Following this analysis of job creation impacts, we evaluate SEED's impact on job satisfaction by comparing the job satisfaction levels of treatment group members with the job satisfaction levels of control group members. It should be noted that the impacts on job creation and job satisfaction presented below represent early effects of the SEED Demonstration on these outcomes. Future analyses will likely yield different results since some businesses will fail while others will develop into mature businesses.

IMPACT ON JOB CREATION

In addition to providing employment for the business owner, small businesses often generate wage and salary employment for others. In fact, research suggests that small businesses generate most of the new employment in the U.S.¹ In this section we analyze SEED's impact on the wage and salary employment of nonparticipants. Specifically, we measure the additional employment (other than the owner) in the businesses operated by treatment group members and compare this total with the total employment in businesses operated by control group members. The difference between the total employment in treatment group businesses and total employment in control group businesses represents an estimate of SEED's impact on the employment of nonparticipants.

It is important to note that this impact estimate may overstate the true impact on employment since we implicitly assume that these "new jobs" did not displace other jobs. That is, in attributing all these jobs to SEED, we implicitly assume no displacement of other jobs.

Frequently, when small business owners need employees they hire family members. Since family members are sometimes compensated differently than regular (nonfamily) employees, we analyze the employment of family members separately from the employment of other employees. In the following sections we first analyze the employment of family members, then the employment of nonfamily members. Finally, we combine the two types of employees and analyze SEED's indirect impact on additional employment.

Employment of Family Members

Small businesses often generate employment opportunities for the owner's family. Occasionally, these employment opportunities are not economically significant -- as when a young child is employed after school.² At other times, the contribution of family members is critical to the viability of a new business. This is especially true in the early stages of business

¹ Businesses with fewer than 20 employees are estimated to have generated 88 percent of the net jobs created in the U.S. between 1981 and 1985. See David L. Birch, *Job Creation in America*. (New York: The Free Press, 1987).

² While economically insignificant, such employment of children in the family business may have important social and psychological effects.

development when the business may not have sufficient revenue to pay a regular salary. At that critical stage, the availability of free (or reduced wage) labor from family members may help determine whether or not the business succeeds.

In Table 9.1, we present the distribution of businesses that were operating at the time of the followup survey by the number of family members employed in the business. This analysis is based on businesses operating at the time of the followup survey. Since some individuals operated multiple businesses at followup, the number of businesses exceeds the number of individuals who owned businesses. Among the 223 businesses operated by treatment group members, 49 (or 22 percent) had a family member employed in the business; among the 128 businesses operated by the control group members, 27 (or 21 percent) had a family member employed in the business. The results of Table 9.1 also indicate that the vast majority of businesses that employed family members, employed only one family member.

Table 9.1 Distribution of Family Member Employment in Businesses at Followup			
	Treatment Group	Control Group	Total
Number of Family Members Employed			
1	40	25	65
2	8	2	10
3	1	-	1
Subtotal Businesses with Family Member Employed	49	27	76
No Family Member Employed	174	101	275
Subtotal - Businesses Operating at Followup	223	128	351
No Business Operating at Followup	381	472	853

Employment of Nonfamily Members

In addition to providing employment for family members, small businesses also generate employment for others. In Table 9.2, we present the distribution of businesses by number of nonfamily employees. As indicated in the table, the pattern of nonfamily employment differs somewhat for treatment and control groups businesses. Among the treatment group businesses, 32 businesses (14 percent) had nonfamily member employees; among the control group businesses, 26 businesses (20 percent) had nonfamily employees. The results of the table also indicate that control group businesses tended to have more employees than treatment group businesses. For example, 12 out of 26 (46 percent) of the control group businesses employed four or more nonfamily members. In contrast, 10 out of 32 (31 percent) of the treatment group businesses employed at least four nonfamily members.

Table 9.2
Distribution of Nonfamily Employment
in Businesses at Followup

	Treatment Group (N = 604)	Control Group (N = 600)	Total (N = 1204)
Number of Nonfamily Employed			
1	12	7	19
2	5	3	8
3	5	4	9
4-9	6	10	16
10-20	4	2	6
Subtotal Businesses with Nonfamily Member Employed	32	26	58
No Nonfamily Member Employed	191	102	293
Subtotal - Businesses Operating at Followup	223	128	351
No Business Operating at Followup	381	472	853

Total Employment in Current Businesses

One measure of SEED's indirect impact on additional employment is the difference between the total number of employees in treatment group businesses and the total number of employees in control group businesses.³ This impact measure yields an estimate of 49 additional jobs created by the SEED Demonstration (179 treatment group jobs minus 130 control group jobs). It should be noted, however, that this impact estimate represents only the jobs created among businesses operating at the time of the followup survey. There were, of course, additional jobs created during the 21-month observation period.

To learn more about the mechanism that generated the 49 jobs and to evaluate the statistical significance of this job creation, we estimated multivariate regressions similar to the regressions described in earlier chapters. The impact estimates derived from these regressions are presented in Table 9.3. The covariates that were used are described in detail in Appendix A.

In Table 9.3 we report the demonstration impacts on three outcome variables: number of family members employed, number of nonfamily members employed, and total additional employment in the business at the time of the followup survey. For the entire control group, the average number of family members employed was .048. The unadjusted impact was .049, while the regression-adjusted impact was .047 (both significant at the .01 level). Thus we can conclude that SEED had a positive and significant impact on the employment of family members.

The results of our analysis of SEED's impacts on employment of nonfamily members are presented in the second row of the table. The average number of nonfamily employees for the entire control group was .168. Unlike the results for family member employment, the demonstration did not have a significant impact on the employment of nonfamily members.

The impacts on total employment (combined family and nonfamily employment) are presented in row three of Table 9.3. For the entire control group the average number of total employees in addition to the owner was .217; for the entire treatment group, the average number of employees was .297. The unadjusted impact of .080 and the regression-adjusted impact of

³ In measuring total number of employees, we include all family and nonfamily wage and salary employees excluding the business owner(s).

.070 were both insignificant. Thus, we conclude that, while SEED had a statistically significant impact on family members' employment, it did not have a similar impact on nonfamily employment or on total employment.

Table 9.3
SEED Impacts on Wage and Salary Employment

Outcome Measure	Control Group Mean	Unadjusted Impacts	Regression Adjusted Impacts
Number of Family Members Employed in Business	.048	.049***	.047***
Number of Nonfamily Members Employed in Business	.168	.030	.023
Total Additional Employment in Business	.217	.080	.070

***Indicates coefficient is significantly different from zero at the .01 level.

These regression results combined with our earlier results on employment in treatment and control group businesses, provide some insights about SEED's job creation mechanism. Based on these results we conclude that SEED's effect on job creation was mainly through the employment of family members. In fact, 30 of the 49 jobs created by the SEED Demonstration resulted from the employment of family members. The creation of nonfamily jobs was less prevalent and the treatment-control difference in nonfamily employment (19 jobs) may well have occurred by chance.

We obtained an interesting result when we interacted gender with the treatment dummy in the multivariate regressions. For all three of the employment outcomes examined above (i.e., family member, nonfamily member, and total employment), the demonstration had a positive and significant impact for males (these results are not reported in the table). For females, the effect was insignificant. This result suggests that male SEED participants were more likely than female participants to operate businesses that employed others. Also, male-owned businesses were more likely to employ a family member than female-owned businesses. These gender

interaction effects are particularly interesting in light of the fact that SEED had a greater impact on females' entry into self-employment than on males' entry into self-employment (reported in Chapter 5). Thus, while the SEED Demonstration had a greater impact on females' entry into self-employment, it had a greater impact on job creation through male-owned businesses.

JOB SATISFACTION

It is unlikely that the SEED Demonstration had a direct impact on job satisfaction. That is, among individuals who choose the same type of employment, we do not expect to observe a treatment/control group difference in their job satisfaction levels. Indeed an examination of treatment/control group differences on various aspects of self-employment (not reported here) indicated approximately equal satisfaction levels among treatment and control group members who were self-employed at the time of the followup survey. We found, for example, that 96.0 percent of the treatment group and 95.3 percent of the control group reported being very satisfied or somewhat satisfied with the type of work they were doing.

While SEED may not have had a direct impact on job satisfaction, it may have had an indirect impact. That is, if self-employment provides more job satisfaction than wage and salary employment, then the SEED Demonstration may have increased job satisfaction by shifting individuals toward self-employment.

To investigate whether self-employment provides more job satisfaction than wage and salary employment, we compared (not reported here) the satisfaction levels of those in self-employment and those in wage and salary employment at the time of the followup interview.

We found that individuals who were self-employed at the time of the interview were more satisfied with several aspects of their jobs than those in wage and salary employment. Specifically, we found that the self-employed reported being more satisfied than those employed in wage and salary jobs with the type of work they do; their degree of independence; their work hour flexibility; and their physical work environment. On the other hand, those in wage and salary jobs were more satisfied than those in self-employment with respect to fringe benefits and the number of hours worked. Satisfaction with pay was approximately equal for both groups.

When asked about their overall satisfaction with their jobs, those in self-employment were significantly more satisfied than those with wage and salary employment (95.2 percent compared with 85.9 percent). Thus, it appears that despite fewer fringe benefits and less satisfactory work hours, self-employment was more satisfying than wage and salary employment.

To obtain additional information on respondents' opinions regarding the relative merits of self-employment versus wage and salary employment, we asked all respondents (not just those in self-employment) which they thought better, self-employment or wage and salary employment. The results, shown in Table 9.4, indicate that 72.5 percent of all treatment group (604) and 66.0 percent of all control group (600) said that overall, self-employment is better than wage and salary employment. This difference is statistically significant at the .05 level.

In response to the questions about specific aspects of the two types of employment, however, both treatment and control group members rated the two types of employment similarly. For example, when asked, which has a higher income, slightly over 50 percent of both groups responded that self-employment has a higher income. The only significant difference was in the proportion who thought that self-employment had more opportunities to learn new skills. More treatment group members (68.1 percent) than control group members (61.8 percent) responded that self-employment had greater learning opportunities.

Table 9.4
Respondents' Comparisons of Self-Employment to Wage and Salary Employment

	Percent who think that Self-Employment is Better		
	Treatment Group (N=604)	Control Group (N=600)	Total (N=1204)
Overall, which is better	72.5**	66.0**	69.3
Which has higher income	54.0	51.3	52.7
Which has fewer hours	9.1	8.0	8.6
Which has greater security	33.0	29.7	31.3
Which has greater satisfaction	90.1	89.3	89.7
Which has more prestige	78.2	75.0	76.6
Which has more flexible hours	81.0	76.7	78.7
Which offers more independence	90.4	88.3	89.4
Which offers more creativity	90.4	87.8	89.1
Which offers more opportunities to learn new skills	68.1**	61.8**	65.0
Which offers better family life	41.1	40.5	40.8

**Indicates the difference in proportions is statistically significant at the .05 level.

In conclusion, it appears that survey respondents in both the treatment and control groups have a high regard for self-employment. This is not surprising given that the survey respondents represent a self-selected group of individuals who indicated an interest in self-employment by applying to the SEED Demonstration.

To assess SEED's impact on job satisfaction, we estimated a multivariate regression (using OLS) on the likelihood of being very or somewhat satisfied with the main job held at the time of the followup survey.⁴ The results of this regression are presented in Table 9.6. For the control group as a whole, 89 percent reported being very or somewhat satisfied with their job. For the treatment group as a whole, 92 percent reported the same level of job satisfaction. The

⁴ The dependent variable in these regressions was equal to 1 for those who reported being very satisfied or somewhat satisfied with their main job and 0 otherwise.

unadjusted impact was .025 and the regression-adjusted impact was .024 (both were statistically insignificant).

Table 9.5
SEED Impacts on Job Satisfaction

Outcome Measure	Control Group Mean	Unadjusted Impact	Regression-Adjusted Impact
Likelihood of being very or somewhat satisfied	.891	.025	.024

CHAPTER SUMMARY

In this chapter we have analyzed the indirect effects of the SEED Demonstration on job creation and job satisfaction. The basic findings of this chapter are:

- SEED lead to the creation of 49 net new jobs in addition to employment for the self-employed business owner (jobs that would not have existed without the demonstration); this impact, however, was insignificant and could have occurred by chance.
- SEED had a positive impact on the employment of family members in the newly created businesses but did not have an impact on the employment of non-family members.
- SEED did not directly or indirectly affect the job satisfaction level of demonstration participants.

PART IV

CONCLUSIONS

CONCLUSIONS

The Washington State Self-Employment and Enterprise Development (SEED) Demonstration was the first federally-sponsored self-employment demonstration program for unemployed workers in the United States. This report presented interim estimates of program impacts of SEED on the employment and earnings of program participants, and on other key outcomes. As such, this report provides policymakers with the first assessment of a reemployment program designed to assist unemployed workers to become self-employed. Estimates of longer-term program impacts of SEED on employment, earnings, benefits receipt, and an analysis of program costs and benefits, will appear in a final report scheduled for 1994.

In Part IV we summarize the study and present the main conclusions of the analyses described in previous chapters. In addition, we briefly describe the implications of these results for the final report.

THE SEED DEMONSTRATION

The primary purpose of the U.S. Department of Labor (DOL) in sponsoring the SEED Demonstration was to test the efficacy of self-employment as a reemployment option. Additional objectives of the SEED Demonstration included testing a number of primary hypotheses including, whether the program provided benefits to participants in the form of accelerated reemployment, increased business startups, increased duration of self-employment, increased total employment, and increased total earnings.

To obtain an accurate assessment of the effects of this self-employment program, the SEED Demonstration was implemented as a classical experiment, in which eligible program

applicants were randomly assigned either to a treatment group or to a control group. The claimants who were randomly assigned to the treatment group were offered three inter-related program services:

- Business startup training and technical assistance (including classroom training, individual counseling, and peer support);
- A waiver of the UI work search requirement which allowed them to continue to receive regular UI benefits while pursuing self-employment; and
- Financial assistance in the form of continued UI benefits and a lump-sum payment (to help with business startup costs and living expenses).

Those assigned to the control group continued to receive regular Unemployment Insurance (UI) benefits and services but were not provided with self-employment assistance. This experimental design assures that the two groups do not differ systematically except in their access to program services and enables one to measure the impact of SEED training and financial assistance as simple differences in outcomes between the two groups.

DATA SOURCES

The analysis in this interim report was based largely on data from a followup telephone survey conducted, on average, 21 months after random assignment. The response rate to the telephone followup survey was quite high (80 percent), yielding 604 treatment and 600 control group respondents. A second followup survey was recently completed. For the final report, information from both surveys will be combined to yield a total observation period of approximately three years after random assignment.

In addition to survey data, we used administrative records from state agencies and from the UI system to evaluate a variety of key outcomes. These administrative records serve to supplement the survey data in the analysis of employment and earnings outcomes. They also serve as the main source of information for the analysis of such outcomes as UI benefits receipt and state taxes paid by program participants.

DEMONSTRATION IMPLEMENTATION RESULTS

The SEED Demonstration was implemented in six sites, representing both rural and urban areas of Washington State, from September 1989 through March 1991. During the demonstration period, the Washington economy was strong and relatively insulated from the recession that affected other states. A total of 755 applicants were randomly assigned to the treatment group and 752 were assigned to the control group.

The results from a detailed implementation and process analysis described in Chapter 4 indicate that the SEED Demonstration was implemented and met the program objective of early implementation. In addition, the results indicate that a program like SEED will attract only a relatively small fraction of UI claimants. Thus, while many people profess to be interested in self-employment, only a small proportion of claimants will take advantage of a training and financial assistance program like SEED that offers the opportunity to pursue self-employment. Other specific results are summarized below:

- Of the 42,350 targeted new UI claimants who received an invitation letter to attend a meeting about the SEED Demonstration, 7.5% attended the meeting and 4.6% submitted an application to participate in SEED.
- The SEED recruitment and intake procedures were implemented as designed, with individuals, on average, being randomly assigned within four weeks from their effective date of UI claim.
- The 1,507 claimants who were randomly assigned (755 treatments and 752 controls) represent 3.6 percent of the targeted UI claimants.
- Demonstration participants tended to be older, more educated, more likely to be in professional, managerial or technical occupations and had higher pre-claim earnings than the broader group of targeted claimants. In addition, many had a working spouse and substantial assets.
- Treatment group members received training services, on average, within 5.5 weeks after their effective date of claim.
- Business training services were provided consistently across all six demonstration sites and participants who attended business training modules and individual counseling sessions gave both the sessions and the instructors high quality ratings.

- Approximately 60 percent (451 out of 755) of the treatment group received a lump-sum payment equal to their remaining UI benefits by achieving five milestones: completing the training program, developing an acceptable business plan, establishing a business bank account, satisfying all licensing requirements, and obtaining adequate financing for the proposed business.
- The average lump-sum payment was \$4,225, and the average length of time after random assignment until receipt of this payment was 7.8 weeks.
- The most common use of lump-sum payments was for business start-up expenses.
- Among treatment group members who received specific SEED services, the aspects of the program they found most useful were the lump-sum payment, business training and counseling.

SELF-EMPLOYMENT IMPACTS

Part II of the report focused on employment and earnings impacts of the SEED Demonstration. The impact analysis measured the effects of SEED by calculating the difference in the employment and earnings outcomes of two groups of unemployed workers (the treatment and control groups), both of whom expressed an interest in becoming self-employed and who applied to SEED, but only the treatment group was eligible to receive SEED program services. Our results indicate that SEED increased the likelihood and accelerated the timing of entry into self-employment, leading to higher self-employment earnings. It did not, however, affect the survival rate in self-employment. Specific findings were presented in Chapter 5 and are summarized below.

- The SEED Demonstration increased the likelihood of being self-employed during the observation period by 25 percentage points, and over 90 percent of the control group mean. Specifically, 52 percent of the treatment group was self-employed at some time during the observation period as compared to 27 percent for the control group.
- Demonstration services had a greater impact in raising the likelihood of self-employment for females than for males.
- Treatment group members' entry into self-employment was accelerated by approximately six months.

- Both treatment and control group members tended to start businesses in the service industry sector.
- Availability of demonstration services did not affect the survival rate in self-employment; approximately one-third of the businesses in both the treatment and control groups failed in the first year of self-employment.
- Total time in self-employment was increased by approximately four months over the entire follow-up period.
- Total earnings from self-employment was increased by approximately \$3,000 over the observation period.
- Average gross monthly earnings from self-employment was increased by approximately \$150.

WAGE AND SALARY EMPLOYMENT IMPACTS

In conducting a comprehensive evaluation of the impact of SEED on employment and earnings outcomes it is also important to examine the effects of the program on wage and salary job outcomes. For example, increased duration in self-employment may correspond directly with decreased duration in wage and salary employment. On the other hand, if the demonstration services provided treatment group members with increased awareness of their marketable skills and enhanced their self-confidence and employability, SEED could have a positive effect on wage and salary employment and earnings. The wage and salary employment experiences of program participants were presented in Chapter 6 and the highlights are briefly summarized below.

- SEED reduced the likelihood of wage and salary employment during the observation period by five percentage points. Specifically, 75 percent of the treatment group worked in wage and salary jobs at some time during the period, as compared to 70 percent of the control group.
- Treatment group members became reemployed in a wage and salary job approximately one month later than control group members and, over the entire observation period, worked one month less in wage and salary employment than control group members.
- SEED reduced total earnings from wage and salary employment over the observation period by approximately \$2,500.

- The SEED program had no impact on average monthly earnings from wage and salary employment.

The above results indicate that SEED delayed reemployment in a wage and salary job by approximately one month and that over the course of the 21-month observation period, treatment group members were unable to recover the loss of this one-month delay. As a result, their wage and salary earnings during the observation period were reduced by approximately \$2,500.

IMPACTS ON TOTAL EMPLOYMENT AND EARNINGS

Part II of the report concluded with an assessment of the impact of SEED on total employment and earnings outcomes. That is, because SEED positively affected self-employment outcomes but negatively affected wage and salary outcomes, we analyzed the combined self-employment and wage and salary experiences of treatment and control group members. As described in Chapter 7, SEED had significant positive impacts on the likelihood of employment and the duration of employment during the observation period, but did not significantly affect combined earnings from wage and salary employment and self-employment. Thus, SEED is a viable policy tool for promoting the rapid reemployment of unemployed workers, but does not appear to lead to higher earnings. Specific findings are summarized below.

- SEED increased the likelihood of employment (either wage and salary or self-employment) during the observation period by approximately five percentage points.
- Treatment group members worked approximately two months more in total during the observation period than control group members.
- SEED had no significant impact on total earnings or on average monthly earnings during the observation period.

IMPACTS USING ADMINISTRATIVE DATA

The impact results summarized above were based on survey data and represent our best estimates of the impacts of the SEED Demonstration on employment and earnings outcomes.

To enhance our ability to analyze several of the key study outcomes, in Part III we examined additional data obtained from administrative sources, as well as other outcomes obtained from the followup survey. The administrative data were used to examine demonstration impacts on business activity, on state tax payments and on UI benefit receipt. The main findings from the impact analysis using administrative data are presented in Chapter 8 and summarized below.

- SEED increased the likelihood of having a business and receiving business income.
- SEED did not affect the rate of business failure.
- Gross business income, state sales taxes and business and occupation taxes were significantly higher for the treatment group than for the control group.
- SEED did not affect the likelihood of working in UI covered employment at some time during the benefit year.
- Treatment group members worked fewer hours in UI covered employment and obtained lower earnings in UI covered employment than control group members.
- SEED reduced the length of the first spell of UI benefit payments by about six weeks.
- Although SEED reduced UI benefit payments received, it actually increased the amount of total benefits paid to treatment group members by approximately \$1,000 per claimant more than that received by control group members after also taking into account the lump-sum payments paid from Federal research funds.

It is important to note that these findings derived from administrative records are consistent with the results based on survey data. This is particularly of interest, given the relatively low cost of using administrative data for program evaluation.

INDIRECT IMPACTS ON JOB CREATION AND JOB SATISFACTION

In addition to measuring the direct impacts of SEED on the employment and unemployment experiences of program participants, the demonstration may also have had

additional, indirect impacts on employment. That is, by increasing the number of businesses created, the SEED Demonstration may have generated new jobs for nonparticipants. Moreover, the SEED Demonstration may also have had indirect impacts on job satisfaction. These analyses indicated that the demonstration had small positive impacts on the employment of others, but did not affect job satisfaction. Specific findings are summarized below.

- Within the 21-month followup period, SEED lead to the creation of 49 net new jobs for nonparticipants, in addition to the jobs created for the self-employed participants.
- The large majority of the new jobs created by the new businesses were for family members; SEED did not increase the employment of nonfamily members in the newly created businesses.
- SEED did affect the job satisfaction level of demonstration participants.

SUMMARY AND IMPLICATIONS FOR FINAL REPORT

The results of this study indicate that the SEED Demonstration dramatically increased the likelihood of being self-employed, accelerated the timing of entry into self-employment, and increased earnings from self-employment. Our findings also indicates that the demonstration program generally had negative impacts on wage and salary outcomes (i.e., delayed reemployment and reduced earnings from wage and salary employment). Upon combining self-employment and wage and salary outcomes, we find that the SEED Demonstration had significantly positive impacts on employment outcomes (increased the likelihood of being employed and increased total time employed), but had no significant impacts on total earnings. An analysis of SEED's impact on job creation revealed a significant impact on the employment of family members but no impact on the employment of others.

Given these results, we believe that self-employment programs like SEED represent viable policy tools for promoting the rapid reemployment of UI claimants. The question of the cost-effectiveness of such a policy tool, however, remains unanswered and will be addressed in the final report.

The final report will be based on data from both the first and second followup surveys. As such, we will be able to examine key employment and earnings outcomes using an observation period of approximately 36 months after random assignment. This will enable us to determine whether the findings documented in this interim report persist over a longer time period, whether they become larger or are dampened. This will provide valuable input to the benefit-cost analysis. In addition, the final report will be able to draw on longer periods of administrative data -- DOR data, UI Wage Records, UI benefit payments -- with which we can examine other important outcomes of the demonstration related to business development, earnings in covered employment and longer-term return to the UI system.

In conducting the analyses for the final report, we will build on the findings described in this interim report. For example, we will continue to examine SEED impacts separately for self-employment and wage and salary employment, as well as analyze program impacts on combined total employment and earnings experiences. This is important, as how the results are viewed from different perspectives depends on the composition of the outcomes. In addition, we will investigate in more detail the differential effects of SEED across various subgroups identified in this report to determine if these differences persist in the longer run and to better understand their causes. In particular, this includes differences in the impacts of SEED on certain outcome measures by gender, prior earnings, and business ownership/experience. Finally, the final report will incorporate more sophisticated econometric techniques to deal with certain statistical issues that arise when the impacts are estimated on self-selected subgroups of the treatment and control groups, or when examining measures that are censored.

The final report will also include a comprehensive benefit-cost analysis that compares the benefits from SEED with the costs of the program from several different perspectives. The benefits will be developed from the impact estimates, while the costs will be primarily developed from administrative records. The benefit-cost analysis will provide evidence on the overall cost-effectiveness of policy tools such as SEED.

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Appendix A
Definition of Independent Variables Included in Regression Models

Independent Variables	
Treatment Group Dummy	1 if claimant assigned to treatment group; 0 otherwise
Vancouver Dummy	1 if UI claim filed in Vancouver; 0 otherwise
King County Dummy	1 if UI claim filed in King County; 0 otherwise
Snohomish County Dummy	1 if UI claim filed in Snohomish County; 0 otherwise
Wenatchee Dummy	1 if UI claim filed in Wenatchee; 0 otherwise
Yakima Dummy	1 if UI claim filed in Yakima; 0 otherwise
Benefit Year Started in Quarter 1 of 1990	1 if claimant's benefit year started in Quarter 1 of 1990; 0 otherwise
Benefit Year Started in Quarter 2 of 1990	1 if claimant's benefit year started in Quarter 2 of 1990; 0 otherwise
Benefit Year Started in Quarter 4 of 1989	1 if claimant's benefit year started in Quarter 4 of 1990; 0 otherwise
Age (in years)	age in years
Age Squared	age ²
Male Dummy	1 if male; 0 otherwise
White Dummy	1 if white; 0 otherwise
Completed College Dummy	1 if highest grade completed is 16 or more; 0 otherwise

Appendix A
Definition of Independent Variables Included in Regression Models

Independent Variables	
Prior Job in Professional, Technical or Managerial Profession Dummy	1 if prior job in profession; 0 otherwise
Prior Job in Services Sector Dummy	1 if prior job was in Service Sector; 0 otherwise
Intended to return to work to prior employer	1 if claimant indicated on SEED application she/he intended to return to work to prior employer; 0 otherwise
Spouse Employed Dummy	1 if spouse employed; 0 otherwise
Children under age six Dummy	1 if claimant has children under the age of six; 0 otherwise
Prior work experience in the area of the proposed business dummy	1 if claimant has prior work experience in the area of the proposed business; 0 otherwise
Had a business at the time of SEED application dummy	1 if claimant reported having a business at the time of SEED application; 0 otherwise
Self-employed prior to (but not at the time) of SEED application dummy	1 if claimant was self-employed prior to SEED application but not at time of SEED application; 0 otherwise
High wage earner in the four complete quarters before filing the UI claim dummy	1 if claimant reported being in upper earnings quartile in the four complete quarters before filing UI claim; 0 otherwise
Medium wage earner in the four complete quarters before filing the UI claim dummy	1 if claimant reported being in two middle quartiles in the four complete quarters before filing UI claim; 0 otherwise
Unemployment Rate in the claimant's county of residence during 1990	Unemployment Rate in the claimant's county of residence during 1990

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